THE AMERICAN ROSE ANNUAL

1922

THE AMERICAN ROSE SOCIETY

The American Rose Society

ORGANIZED 1899

MEMBERSHIP

(According to Revised Constitution adopted Sept. 29, 1920.)

LIFE MEMBERS pay $50, and are thereafter exempt from the payment of dues. The fees received from life members are invested as a permanent sustentation fund.

RESEARCH MEMBERS pay $20 or more annually, all funds so received being devoted to rose research.

SUSTAINING MEMBERS pay $10 annually.

ANNUAL MEMBERS pay $3 each year.

AFFILIATED MEMBERS are received at $3 through the secretary or other official of an organized rose or horticultural society, who will distribute the publications to which such members are entitled. If 10 or more affiliated members are so received, a rebate of 50 cents each is returned; if 50 or more, there is a return of 75 cents, each; if 100 or more, there is a return of $1 each.

All members vote at all meetings, receive the publications of the Society (affiliated members through their secretaries), and are provided with Membership Cards entitling them to admission to all exhibitions in charge of the Society.

EXHIBITIONS AND ANNUAL MEETING

The American Rose Society holds annually one or more exhibitions. These usually consist of an exhibition held in connection with some large flower show, and of one or more outdoor exhibits held at some one of the Society's Rose-Test Gardens, or at some other large rose-garden. Information will be sent to members concerning any such exhibitions in 1922.

PUBLICATIONS

THE AMERICAN ROSE ANNUAL

is mailed in March to all members, and copies are sent to the secretaries of all affiliated societies for each member thereof for whom proper payment has been made. It cannot be bought in book-stores.

Extra copies may be had, by members only, at $2, upon application to the Secretary. While available, the Annuals for 1921, 1919, 1918 and 1917 are supplied to members only at $3 each, and the 1916 Annual at $5, or, while available, including 1922 membership and six Annuals, for $18. (The 1920 Annual is out of print.)

THE MEMBERS' HANDBOOK

is issued in September of each year. It contains proceedings of meetings in brief form, rules of registration, judging, premium lists, etc. It also contains the complete membership list to April 15, both in alphabetical and in geographical forms, and seasonable rose information.

Information for or about the publications should be mailed to J. Horace McFarland, Editor, Harrisburg, Pa. All membership inquiries and payments should be addressed to

JOHN C. WISTER, Secretary,
606 Finance Building, Philadelphia, Pa., U. S. A.

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THE AMERICAN ROSE ANNUAL

THE AMERICAN ROSE ANNUAL

THE 1922 YEAR-BOOK OF ROSE PROGRESS

EDITED FOR THE AMERICAN ROSE SOCIETY BY

J. HORACE McFARLAND

1922
AMERICAN ROSE SOCIETY
EDITOR'S OFFICE
HARRISBURG, PA.

THE American Rose Annual is supplied to all members of the American Rose Society whose dues are paid for the current year. Additional copies are supplied to members only at $2 each, postpaid. When sold separately, the price of the Annual is $3, and includes annual membership. Members may obtain copies of the 1917, 1918, 1919, and 1921 Annuals, so long as in print, at $3 each, and of the 1916 Annual (the first issue), at $5; or the six issues will be supplied, while in print, for $18, including current membership.

Address, JOHN C. WISTER, *Secretary*
606 Finance Building, Philadelphia, Pa.

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By J. HORACE MCFARLAND, Editor

The 1923 American Rose Annual will be issued in March, 1923

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J. HORACE MCFARLAND COMPANY
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Harrisburg, Pa.

The Rose

The Rose complained to me: "You are content
To let the lilacs bloom but once a year,
The violets may sleep when spring is spent,
And swift the lazy aster's late career;
But I that fed the bumble-bees of June,
Free as the sky in summer's green gold glow,
From glassy tombs of summer's buried noon,
Must quicken with my blush the barren snow."

"Sweet Rose," I answered, "We have loves a plenty,
One mistress comes, delights a while, and goes;
But be there one, or be there one and twenty,
There's only one that ever is a Rose!
That Rose eternal men die dreaming of;
We waver in our loves, but not in love."

—G. A. Stevens.

THE AMERICAN ROSE SOCIETY

Organized March 13, 1899

"To increase the general interest in the cultivation and improve the standard of excellence of the Rose for all people"

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MEMBERSHIP

Life Members ($50), Research Members ($20 or more annually), Sustaining Members ($10 annually), and Annual Members ($3), receive all publications, are entitled to admission upon presentation of membership card to all exhibitions managed by the Society, and can vote at all meetings.

Affiliated Members pay $3 each, and have all privileges. If 10 or more such memberships are sent in by the secretary of a local society interested in rose culture, 50 cents each is returned for the use of such society; for 50 or more members, 75 cents each is returned; for 100 or more, $1 each. Publications for affiliated members are sent to and distributed by the local secretary.

Remit to order of American Rose Society, and address

JOHN C. WISTER, Secretary, 606 Finance Building, Philadelphia

*Deceased

EDITOR'S PREFACE

THE members of the American Rose Society have again, and to a greater degree than ever, made this Annual of rose progress their book. The Editor has put in it what they provided, or what they have asked him to obtain for their rose information and enlargement. For this help he is grateful, and it assures him that his labor in obtaining and assembling the original material in these pages is not in vain.

The steady progress of the effort to make the rose universal in America through the introduction of varieties able to endure the varied conditions of our vast area is checked, not stopped, by the untimely death of that great genius of hybridization, Dr. Van Fleet. It has seemed best, inasmuch as he had for six years used the American Rose Annual to report the progress of his adventures into the world's rose resources, to present in this issue some detailed account of the life and personal qualities of that great man.

In the fine forward look of President Pyle mention is made of the desirability of having many rose shows in America in 1922. To aid those who are disposed to undertake this pleasant and desirable work, experiences and suggestions are given in several articles. It is hoped that these will be found useful.

The two referendums to our members brought out strongly the desire to know how to protect roses from insects and diseases. The articles provided are probably the most complete presentations yet made on that essential subject, and they ought to be very helpful.

There is always interest in new roses, always the lure of the novelty. The Editor's office has diligently pursued all the rose hybridists of the world, and in consequence there is printed in this Annual a very complete account of the new roses, as well as critical comment on many of them by capable foreign and American rosarians.

Attention is urged toward the "Official List of American Roses," this year presented in a novel form giving easy access

to the work of the originators as well as to the correct names, the parentage, where ascertainable, and the year of introduction of the varieties themselves. With this accurate information thus available, there is no excuse for inaccuracy or for duplicating rose names.

The article "What New Roses Does America Need?" presents the ideals of the best rosarians, both for "forcing" roses and for the garden, and the comments on the commercial cut-flower rose situation again evidence America's supremacy in this branch of rose-growing.

"Rose Notes" include items of just as much importance as the longer articles, grouped together for convenience and for space reasons. It is to the Editor very regrettable that he has been able to find room for barely half the items of rose interest that came to hand and that several longer articles of real value have had to be omitted. (It should be understood that this Annual must, for financial and postage reasons, be mailed within the one-pound parcel-post rate, and its weight cannot therefore be increased.)

Rose-lovers anywhere who want to help the rose locally and nationally are urged to use the enclosed question cards, and to write freely to the Editor on rose topics.

The "Members' Handbook" will follow in September, giving not only the two invaluable lists of the rose fraternity included in the Society, but important details as to the activities of the organization, as well as seasonable rose information.

Much care has been used to secure for our members, so far as possible, commercial access to all the roses and rose supplies mentioned in this Annual through the trade announcements at the end of the book. All the merchants there presented are reliable, and it is believed the list is unusually complete as to the dependable rose-dealers of America.

J. HORACE McFARLAND

Harrisburg, Pa.,
March 15, 1922

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PLATE II. ROBERT PYLE, President American Rose Society

Is the American Rose Society Worth While?

By ROBERT PYLE, President
On behalf of the Officers of the Society

IT IS well in the progress of an organization at least once a year to take account of conditions and look into the future.

It is with this desire that I here set down not at all a catalogue of our activities, but a statement of progress, together with an expression of our hopes for the future.

We can properly report as follows:

1. We have more full-paid members at this date than at the same time in any previous year.

2. Our members are provided with greater and more advantageous opportunities and privileges than at any previous time.

3. Many more American communities are aroused to the value and possibilities of public rose-gardens and to the desirability of making accessible to the public good private rose-gardens.

4. A much-increased activity exists in experimentation and research, both for hybridization and production, of not only "finished" roses, but of rose stocks in and for America.

5. The American Rose Society has been legally incorporated in the state of Pennsylvania as a corporation of the first class, not for profit, in order that it may complete and carry on its favorable agreement with the Bureau of Plant Industry of the Federal Department of Agriculture for the wide and equitable distribution of the rose creations of the late Dr. W. Van Fleet. The first of these roses, illustrated last year, has been named Mary Wallace, and is now in propagation under this arrangement. (The second, "W.C. 237," is illustrated on Plate V.)

6. There has been, it is believed, much growth in the outlook, vision, and ideals of those most responsible for the welfare of the American Rose Society, during the year just ended.

7. Our main office in Philadelphia has been completely equipped, and here, through the continuing courtesy of the Pennsylvania Horticultural Society, our Secretary, Mr. Wister, and his assistant continue to render to the membership prompt and active service. Members are urged to call at this office, which is within two minutes' walk of the Broad Street Station of the Pennsylvania Railroad.

8. We have participated with vigor and success in important indoor rose shows, held in Boston in April, 1921, in Hartford, Conn., in January, 1922, and we are preparing, as these words are written, to take part in the International Flower Show at Indianapolis, March 25 to April 1, 1922, working through our Committee of Fifteen on Commercial Forcing Rose Interests.

9. The Annual Meeting of the Society, held in Washington after a field day at the wonderful trial grounds of Dr. W. Van Fleet at Bell, Maryland, at the Arlington Rose Test-Garden, and in Mrs. Bell's great garden at Twin Oaks,

was an occasion of pleasure and importance, and these annual meetings in rose-time must continue to increase in attendance and interest.

10. Perhaps a major source of our growing strength and rose influence is in our publications, which are fully worth the price of membership, in the view of many of those associated with us. Our indefatigable Editor, Mr. J. Horace McFarland, conducts a world-wide rose correspondence, and his office serves as the focusing point for rose information, and is, indeed, the generating center for many of the ideas distributed through this Annual in March and our Members' Handbook in September.

It is now possible to talk and to hear music over great distances by the use of an ingenious little vacuum tube which acts as an amplifier of the source of sound. The American Rose Society today needs many amplifiers with which to reach the ears of rose-lovers all over America. I believe we possess these amplifiers in our own members, and thus I ask each to tell his or her neighbor and friend of the worth-whileness of the American Rose Society, which will become more worth while as it becomes stronger.

Theodore N. Vail, until recently the outstanding figure in building our great continental telephone system, was once planning to advertise the telephone, when objection was raised because everyone already knew about the telephone. "Yes," said Mr. Vail, "they all know about it, but, hang it, I want them to *think more about it!*"

In the case of the American Rose Society, a great many people don't even know about it, and every member can help, not only to tell them but to get them "to think more about it."

The general officers of the Society, including its Executive Committee and other operating committees, are wide-awake and doing much to advance the value of the Society to its members and to the nation. It is by reason of the potential activity of these officers and committees that I can now properly here suggest the work ahead of us, so far as it has been concretely formulated.

(*a*) Mention has been made of the incorporation which has permitted co-operation with the Department of Agriculture in Washington, looking toward the dissemination of the new roses hybridized by the late Dr. Van Fleet. Members of the Society are warranted in making known the very great advance in rose distribution thus assured, under methods entirely original and equitable.

(*b*) The valuable work being carried on by our five Rose-Test Gardens is being maintained, although accessions of new varieties have been too few and the results of the tests consequently less significant. It is hoped to improve the practice with respect to these test-gardens, and thus to make it worth while for

originators to provide proper testing material to each garden in advance of public dissemination.

(*c*) Your officers have dedicated themselves and their pocketbooks to the task of greatly increasing our membership. Public-spirited supporters have contributed more than $1,000 for this promotion work, in which we have sought and used all available channels of publicity. In this effort the horticultural magazines have been particularly helpful. We now again bespeak the enthusiastic interest of each present member in bringing into the Society others who love roses.

(*d*) The Committee of Fifteen on Commercial Forcing Rose Interests, recently appointed with full authority, is expected greatly to advance the interests and information of commercial rose-growing. It includes men of breadth, knowledge, and ability, accustomed to accomplish much.

(*e*) Elsewhere will be found the names of the new roses registered by the American Rose Society, each of which has received the critical attention not only of the Committee on Registration but of the entire Executive Committee. The Society hopes to be placed in possession of resources which will warrant the provision of honors and prizes to be awarded for other meritorious new roses.

(*f*) A National Rose Show-Garden (not a test-garden) has been proposed for a notably favorable location in Washington, and a plan of breadth and potential beauty has been prepared by a member of the committee on that garden, Mr. Frederick Law Olmsted, the eminent landscape architect. The committee also includes J. Horace McFarland and Hon. James R. Mann, of the Federal House of Representatives.

(*g*) An adequate memorial to the life and work of our deceased associate, Dr. W. Van Fleet, is under discussion. It has been proposed that a fund be raised from which to award a "Van Fleet Gold Medal" to meritorious new roses suitable for garden culture, and resulting from breeding in the rose strains upon which Dr. Van Fleet was engaged at the time of his death. This medal, if properly endowed, could easily become the highest rose honor available anywhere in the world.

(*h*) An active member in Iowa has proposed that we establish a circulating library of books about roses. Interested members are asked to communicate with the Secretary and to offer books for a place in this library, which might well have at least three divisions, operating possibly from Philadelphia, from Chicago, and from Portland.

(*i*) It is hoped that 1922 will witness the designation of what is popularly known as the Shaw Memorial Gardens at St. Louis as an authorized test-garden of the American Rose Society. Dr. George T. Moore, the Director of the Missouri Botanical Gardens, the official name of this great institution, is already doing excellent rose work, as may be noted further on in these pages.

(*j*) It is hoped to arrange that our members each year report on a scale of points their choice of the best ten bush roses and the best five hardy climbers, to be tabulated and announced as the Society's selections.

(*k*) The most vitally important task for the American Rose Society is to promote the establishment of community rose-gardens all over the United States. In a referendum conducted by the Editor, locations in some forty-five cities have been suggested for such gardens. In these gardens, established as a municipal expense but prospering under the loving oversight of members of this Society, our children may have opportunity to come into their rightful heritage of rose knowledge and rose love.

Notable instances are on record in this issue of the Annual of progress in this direction. In Richmond, Va., a public-spirited florist has distributed roses

to 3,000 school children and provided prizes for their success. In Macon, Ga., many thousands of roses have been provided and distributed because Macon proposes to make herself the Rose City of the South.

(*l*) It will greatly stimulate the effective progress of the rose in America if a large number of our members make the Rose Pilgrimage to the Pacific Northwest as planned for this year, but, as noted in a letter from the President, postponed because of local conditions in the cities to be visited. The good people of Portland, Tacoma, and Seattle, and many of the rose-lovers in the great state of California, very much want us to visit them. With a year's notice, many members can plan to give themselves a rose month and the whole nation a rose advantage in 1923. It will help the Society's officers to plan with wisdom and economy if members who contemplate taking this trip will so write the Secretary, even though they do not, in so doing, incur any obligation.

(*m*) The hope is expressed that 1922 will see great progress toward the planting of roses along the highways of the nation. Is it too much to expect that the use of the easily handled, American-bred climbers should become more general along our highways, to the vast advantage not only of the contiguous property owners but of the traveling public of the whole nation? It might easily be managed to have many such highways living memorials to our greatest American rose hybridist, Dr. Van Fleet, through the use of his three world climbers, American Pillar, Dr. W. Van Fleet and Silver Moon.

(*n*) It is not improper, even though our Executive Committee, members of which travel considerable distances for frequent meetings at their own expense, has done notably good work, to express the hope that by cooperation with other organizations there may be possibly established an American Rose Council, in which every National horticultural organization of note might have a representative. Through this organization contacts might be made of vast advantage to the whole nation.

No organization such as ours can be stronger than its individual members, save as those individual members themselves work with it, in it, and for it, for the right strength. I venture, therefore, again to urge the interest of the members, not only in increasing our numbers for obvious benefit, but in critical rose-study, in prompt reports to the Editor or the Secretary, in questions asked of our Committee of Consulting and Advising Rosarians, in the stimulation of local rose shows, in bringing to the notice of their local publications the value of the rose in the landscape and in the home.

With such cooperation, with even so small an amount of time as fifteen minutes each day spent in the interests of the American Rose Society, we can thus, strengthened, enlarged and emboldened, truly make the rose universal in America. We can stimulate the interest and the demand which will bring to us American-bred roses for America. Let us possess the land for roses!

PLATE III. The late DR. WALTER VAN FLEET and some of his American-grown Hardy Climbing Roses. (See pages 17 and 20.)

Dr. Walter Van Fleet, American Rosarian and Plant Hybridist

AN APPRECIATION BY SOME OF HIS FRIENDS AND ASSOCIATES

MANY members of the American Rose Society who have followed its progress since 1916 will probably agree with the Editor that the most interesting articles printed in the successive Annuals have been those by the far-seeing, patient investigator who each year reported on the progress made toward the better American garden rose, beginning in 1916 with "Possibilities in the Production of American Garden Roses." In 1921 these well-expressed scientific notes included certain pictures, one showing for the first time the hybrid "W. C. 124," shortly thereafter named "Mary Wallace," in honor of the daughter of the Secretary of Agriculture, and to be sent out under the auspices of the American Rose Society as the beginning of a new race of roses.

On January 18, 1922, Dr. Van Fleet wrote the Editor that by reason of the results of the disastrous Easter Monday freeze the preceding season, his notes would be shortened, but would be in hand by February 1. The Doctor added that his health was impaired, and that he was going South, hoping for relief. Then came the shocking news of his sudden death at Miami, Fla., as the result of an imperatively necessary operation, on January 26, 1922.

It had been the Editor's advantage to sometimes visit Dr. Van Fleet at his home, which as his own property was appropriately located on the very edge of the plot owned by the Department of Agriculture at Bell Station, midway between Baltimore and Washington. The Doctor had selected precisely the land and exposure that he wanted to carry on his acute hybridizing work, and here it was a rare privilege to meet with him.

Though, as will appear later in this article, Dr. Van Fleet produced many effective roses now in commerce, his work was extended in other directions. Strawberries, gooseberries, corn, tomatoes, peppers, cannas, gladioli, geraniums, honeysuckles

felt the touch of his magic hand in improvement. He was seeking to replace our destroyed chestnuts, and at one recent interview he announced that he had produced chestnuts eighty-five per cent blight-proof, and was on the way to complete success.

In hurriedly getting together this all too incomplete tribute to Dr. Van Fleet, the Editor has come to realize the impression his breadth of culture and sweetness of spirit had made on all who came to really know him. He shunned notoriety, and it was impossible to get him to make a public address. With a small group, however, at his home or in the field, he was the brilliant, genial, human scientist whose memory will long live, certainly as that of the greatest rose hybridist and, probably, the greatest plant-breeder America has yet known.

THE FAMILY STORY

From his sister, Mrs. Moses Lyman, of Longmeadow, Mass., herself a notable plant-lover, come the following details:

Walter Van Fleet was born at Piermont on the Hudson, Rockland County, New York, June 18, 1857. The forebears of the Van Fleets in America came from Utrecht, Holland, in 1662, to New Amsterdam, the direct ancestor of our immediate family settling in the Mohawk Valley, from whence, in course of time, our parents removed to Williamsport, Pa., eventually settling on a farm at Watsontown, Pa.

Walter attended school in Williamsport and then at Watsontown, and with his brother and two sisters grew up in a real home, in which were books and music, and in which all joined in the love of the open as well as of dogs and horses and birds. It was characteristic of Walter that when he was interested in anything he always wanted to probe deeper to find out all that could be known about it. An omnivorous reader, it was natural for him to develop the interest which later ruled his life.

All too soon we were grown, and then Walter became interested in ornithology, devoting much time to this study, and in time going to South America where he made a collection of butterfly and bird specimens for Harvard. Coming home, he studied medicine and went into active practice, both at Watsontown and later at Renovo. Finding that it was absorbing him to the exclusion of opportunity for following his deepening desire to hybridize plants, he gave up his practice and actively undertook his real life-work.

Walter was a social being. He formed real friendships as a boy, even though he was quiet and even shy. In the family circle he was the favorite, and his older brother Frederick and my sister Ida, with myself, always turned to him for advice, because he was just and dependable, as he continued to be during his useful life.

"THE ROSARIAN'S" BIRDS AND MUSIC

Although his work was conducted at the Bell Experiment Plot, Dr. Van Fleet visited the offices of the Bureau of Plant

Industry each week, where he had desk-room and the occasional use of a stenographer. He was first employed by the Department of Agriculture as an investigator of plants used as drugs. One of his associates, Miss Carrie Harrison, writes thus:

Dr. Van Fleet was for eight years chairman of judges at the Brookland Rose Show, and here he once helped me stage some forty bottles of perfumery roses from his trial plot at Arlington. It was at this time that the newspaper men asked me his title; they did not like the Department designation. I finally told them he was "the rosarian." This was a new word to the reporters. I insisted that it was a perfectly good word, and commonly used in England. It consequently stuck, and no Washington paper ever spoke of Dr. Van Fleet thereafter except as "the rosarian."

Once, at Bell, I saw "Jim," a blue jay that Dr. Van Fleet had picked up, and whose broken wing he had properly repaired. The Doctor called the bird by whistling, and told me that Jim would be at the house when we got there. Sure enough, Jim was there, and he promptly perched on the Doctor's shoulder. When Mrs. Van Fleet brought out a crust of bread, which Dr. Van Fleet put in his mouth, Jim ate it out of his mouth as fearlessly as you please!

Did you ever hear him play the violin? I knew no man, not a professional, who understood Beethoven, Chopin, and Liszt as he did.

While walking one day with Dr. Van Fleet through the trial rows at Bell, in the autumn of 1920, I casually picked some of the beautiful rose heps. At this the Doctor began collecting them with great discrimination, and now and again gave me a handful, until my pockets were full. When he came to his seed-bed where there were several rows of roses from two to eight inches high, he stooped, took up a handful of dirt to show me the bed was made of sand and good loose soil, just like any right seed-bed, and then, breaking up a handful of heps and making a little row with his finger, he put the rose seeds down just like any seeds, covering them about twice as deep as his thumb nail. He said, "You can see them better if in rows. One can lay a narrow board over the row until early spring to remember the line. When they are two or three inches high I transplant into my nursery for young plants."

I distributed these precious heps among my friends, and as a result, Mrs. Gamble has about five hundred young plants doing well. These she has distributed through a bit of woodland.

Dr. Van Fleet told me once, "Don't break up your rose-seed-bed for seven years, as they will be coming along all that time."

VAN FLEET, THE GREAT ROSE-BREEDER

One of Dr. Van Fleet's close associates in the Bureau of Plant Industry was David Fairchild, who is in charge of the foreign plant and seed introduction work, and is also President of the American Genetic Association. About him Mr. Fairchild writes as follows:

Walter Van Fleet is dead, and a great genius of plant-breeding has passed on. His discoveries, for generations to come, will live to remind us of his work. Every spring those lovely roses which owe their existence to the touch of his vanished hand will bring to those who knew him the memories of a great soul. As I set

down these few words I realize that I can only draw the silhouettes which from time to time his shadow cast upon my own life. The heart-breaking suddenness of his tragic end has but one saving thought. He had long wanted to see in our own South the tropical palms which in his early manhood he had wandered under on the Amazon, and he did.

Van Fleet's art was expressed not in figures of speech, neither in the colors which a painter spreads on canvas, nor yet in the forms which the sculptor fashions out of clay, but in a living substance which changes with the seasons. He worked with things which grow, and growing change their shapes and colors. Is it not something superbly great to have brought about through years of thought and effort the three greatest climbing roses of the new world—roses which in his own lifetime have been sold by the carload and planted by the hundred thousands? In his American Pillar, his Dr. W. Van Fleet, and his Silver Moon, Dr. Van Fleet has given to us the loveliest climbing roses of our generation, and there are yet waiting introduction, many superb new varieties of his origination.

It is owing to a strange coincidence that I am able to give here, partly in his own words, the story of the origin of the matchless rose which bears his own name. For the past two years I had urged the Doctor to come South and begin his plant-breeding here at the Miami Station, where the spring starts in January. Though he was keen to come, there was, until this winter, no one to take care of his new hybrid rose seedlings at Bell during his absence. It was while the preparations were being made for this looked-for trip that the Doctor strained himself by lifting some objects too heavy for his lessened strength, bringing back an old case of hernia. (His death a few days later was the direct result of a strangulated hernia, or the peritonitis occasioned by it.) He felt his deficiency, but hoping that the change to a warmer climate would bring relief he carried out his plan and took the train for Miami. It was my good fortune to be on the same train. It occurred to me that he might like to talk of his work, and quite naturally the conversation drifted to the subject of the origin of the Van Fleet rose, for which I have always had great admiration. Following a habit I have of recording in a little notebook conversations which interest me, I set down as he talked his story of this rose as he told it, little dreaming, however, that I was hearing what turned out to be almost the last words of this remarkable man.

In the early 90's the Doctor and his wife were attracted to the remarkable colony at Ruskin, Tenn., to which came such men as the Russian Prince, Kropotkin, and the famous journalist, Arthur Brisbane. It was here that the rose later named for the Doctor was originated. He had taken South, along with a host of other seedlings, a weakly little plant which itself was a typical Wichuraiana, resulting from a cross with the Safrano rose, a well-known old fashioned Tea. Using this seedling as the female parent, he worked upon it pollen from the French Hybrid Tea, Souv. du President Carnot. But three or four heps matured, and these he took with him, when his medical service at Ruskin terminated, back to Little Silver, N. J., where he later sowed the few sound seeds they contained. Of these seeds but a few germinated and grew. This was in the fall of 1899, and in 1901 the seedlings bloomed. Among about 150 others in bloom at the same time, this particular rose showed at once its remarkable freshness of color and unusual bud character. Mrs. Van Fleet and the Doctor agreed to name it Daybreak.

Then Patrick O'Mara, of the firm of Peter Henderson & Co., visited the gardens, and he said when he saw in bloom the few plants of Daybreak that the Doctor had propagated, "We've got to have that at once," though he criticized its seeming lack of vigor. The Doctor accepted O'Mara's offer carrying the

right to name the new rose and fully control its sale, and he was paid $75, although at that time he thought it should have been worth $250. As was his custom, Dr. Van Fleet retained a plant for himself—a very fortunate thing!

The several precious plants of this Daybreak were delivered in the fall to Mr. O'Mara, and the latter was told to start its propagation slowly in a cool-house, but this was not done. The gardeners of the firm put the plants in a hothouse and forced them into bloom. The blooms were flimsy and did not impress the other members of the Henderson firm. O'Mara said, "It looked devilish good to me, but it doesn't hold up."

Here the Doctor took up the story in his own words:

"The plants were taken out of the greenhouse and sent to Charles Henderson's place at Hackensack, and planted there in their tender condition. Bitter weather came along and killed every one of them, but I was not told. I waited five or six years for the firm to bring it out. It was due to come out in 1906, but it did not come. O'Mara came to Little Silver for other things, but said little about Daybreak. My own plant in the meantime had grown into a beautiful bush with a big root system, and I had made a propagation or two to make it safe. When the 1906 Henderson catalogue came out and Daybreak was not in it, I wrote to O'Mara, and he then told me he had lost it all. I told him that wouldn't do, that I had stock, and that it was the finest thing I had. I told him the public was entitled to it, and that if he wouldn't put it out I would. He said, 'Bring some up and show it to Charles Henderson.'

"It was in good bloom then, and I brought up to New York an armful of it, and also an armful of the Silver Moon with its long-stemmed flowers. O'Mara was delighted when he saw these, and said, 'Business or no business, we'll go right in and see Mr. Henderson!' The latter gentleman said at once, 'We have had no such novelties as these for years. They are revelations; we want both of them.' They both liked the Van Fleet best, because a pink rose is a better seller. Henderson said, 'I'll pay the Doctor anything he asks for Daybreak and this white rose.' They sent their propagator right down and took the bud wood. I asked him $100 for it.

"Then the roses disappeared from view for three or four years, or until 1910, when the Henderson catalogue featured both of them. They had coined for the white rose the name of Silver Moon—a very happy name.

"Patrick O'Mara wrote that Charles Henderson was going to name the other rose after me. I objected, and asked him to continue to call it Daybreak, but O'Mara insisted, and thus it was finally named Dr. W. Van Fleet."

I give here this account of the first beginnings of these two great roses for two reasons: first, because as the years pass and the Van Fleet becomes perhaps the best known as well as the finest climber in America, some of its admirers will want to know how it began; and, second, also because it shows how strong were the good Doctor's convictions regarding the suitability of a newly made hybrid rose, and how persistently he fought for its recognition by the public.

On another occasion I shall want to pay tribute to Dr. Van Fleet as a discoverer in the field of plant-breeding, but to those who love roses and who were never permitted to be with him in the height of the rose season at his plant-breeding garden in Maryland, it may be interesting to know that it is very doubtful if there was ever brought together in this country so select a collection of species of the wild roses of the world as he had there.

From this collection, in which the Doctor worked for several years, are coming some of the finest hybrid forms, which have already shown that they are as perfectly adapted to our conditions as the English-bred roses are to England. It is a pleasant thought that for many years to come these productions

of his, like poems published after the poet's death, will appear to remind us that he once lived.

Could there be any finer ambition than to make this world more beautiful after we are gone? And could there be any more beautiful way to do this than the one that Dr. Van Fleet has chosen?

His last resting-place is in the hills of Pennsylvania, but his flowers will be his memorials everywhere.

DR. VAN FLEET'S ROSE IDEALS

Another associate of Dr. Van Fleet in his departmental work adds further interesting details. Mr. F. L. Mulford, a horticulturist in the Bureau of Plant Industry, knew him and his work well. He writes thus:

The ideal rose for which he was striving, in his later work at least, was a garden form, that variety that would compare in healthfulness and disease resistance with the best of the rose species; that would be hardy under ordinary garden culture; and that would be a continuous bloomer. His experience taught him what would be likely to give the desired results, but often he could not come directly to the end sought. For example, when he wanted to combine the characters of some newly found species with a Hybrid Tea rose, he would often find that the two could not be crossed directly. He would then seek some other rose that would combine with the new species without losing the characters which he desired to preserve, after which the resulting hybrids would be crossed with the Hybrid Tea. Sometimes a second cross was necessary before he could get the seedlings for which he was striving.

His personality was altogether lovable, and those who came in contact with him day after day appreciated his kindly consideration. He was steadfast of purpose, as is shown by the ruthless manner in which he rooted out inferior seedlings so soon as he believed them to be valueless. Modest and retiring in the extreme, he had an intolerance of hypocrisy and cant that was notable.

In 1918 he was awarded the George Robert White medal of honor for eminent service in horticulture by the Massachusetts Horticultural Society—perhaps the highest honor that can come to a horticulturist in this country. He has also been awarded three medals for the new rose, Mary Wallace, and an appointment had been made for him to receive at the hands of the Secretary of Agriculture, on January 31, in the latter's office, the gold medal awarded by the city of Portland, Ore., on which day instead he was buried.

The rose introductions of Dr. Van Fleet are listed by Mr. Gersdorff in full detail. He was responsible also for other plant improvement, notably in strawberries, in which he was pursuing high ideals with constant progress. The following list suggests the breadth of his work, though it gives him no credit for his wonderful progress toward a blight-proof chestnut.

Geranium, Flashlight; *Lonicera Hendersonii*; Pepper, Upright Salad; Sugar Corn, Sheffield; Tomatoes, Combination, Quarter Century; Gooseberry, W. Van Fleet; Strawberries, Early Jersey Giant, Late Jersey Giant, John F. Cook, Edmund Wilson; Cannas, Crimson Bedder, Flamingo, Pennsylvania; Gladioli, Lord Fairfax, Princeps, Isaac Henderson, Mastodon.

Dr. Van Fleet wrote interestingly about his plant investigations, as evidenced in the successive issues of the American Rose Annual, the Journal of Heredity (of which he was an associate editor at the time of his death), the Standard Cyclopedia of Horticulture, and other publications. His style was lucid and attractive, and he never boasted or made extravagant claims.

WORKING WITH THE "RURAL NEW-YORKER"

For a decade Dr. Van Fleet was closely related in the conducting of trials in the ground as well as writing about them, with that fearless farm periodical, the *Rural New-Yorker*. Its editor, Mr. Herbert W. Collingwood, has written a great appreciation, from which a few paragraphs are here presented:

Dr. Walter Van Fleet was one of those remarkable characters who, while stamping strong personality upon their life-work, keep veiled most of their own personalities. He objected strenuously to attaching his own name to his products, in striking contrast to certain hybridizers less modest and retiring. The great rose, Dr. W. Van Fleet, was so named against his own wishes. As I look back upon it now, I think this modesty and dislike of publicity made up a genuine part of the man's real greatness, for in the last analysis it must be said that "A humble spirit becometh a king."

For Dr. Van Fleet was truly a great man. He has left to the world enduring gifts of beauty and increasing usefulness. Poets, inventors, soldiers, statesmen may be honored because they have made the world safer and happier; yet here was a quiet, modest man who spoke to the people only through flowers. The *Rural New-Yorker* has distributed thousands of one of his roses as gifts to its readers, and these roses as planted have climbed not only over the homes but into the hearts of the people.

I think Dr. Van Fleet had in his mind something of this thought of reaching the people in his earnest striving to produce "roses for the million." He was continuously searching for a finer and yet finer climbing rose, and he refused to be satisfied with anything that fell short of his ideal.

One "rose for the million" which everyone has seen is Ruby Queen. We have one growing over the end of an old stone house, where, with ample opportunity for climbing, it is, in its season of bloom, a wonderful sight. Yet while Dr. Van Fleet thought well of this variety, it was his ambition to produce the same richness of color and riot of growth with a better flower.

This faithful associate, kindly and sympathetic friend and honorable gentleman was, as I see him now, America's greatest worker with plants. His life was given to high ideals. It was a simple and humble life, and for years to come the world will be better and the spirit of man cleaner by reason of the beauty he has left behind him in the flowers he loved so well.

FROM THE DIRECTOR OF THE ARNOLD ARBORETUM

Prof. C. S. Sargent, the tree-authority of the world, and the head of America's greatest arboretum, thus writes:

Dr. Van Fleet was possessed in a remarkable degree of imagination, patience, industry, a wide knowledge of plants and the skilful use of his hands—gifts essential to the success of plant-breeding. Though most interested in roses, he has worked with many other plants, and his success in reproducing artificially, the natural hybrid between two American species of chestnuts may have important economic results. Rose-lovers will long remember Dr. Van Fleet by at least three of his creations—American Pillar, Silver Moon and Dr. W. Van Fleet.

DR. VAN FLEET AT LITTLE SILVER

Much of Dr. Van Fleet's work was done at Little Silver, N. J. From two of his associates there come the following words of appreciation. Mr. J. A. Kemp writes:

Dr. Van Fleet was unquestionably the greatest plant breeder of modern times, if not of all time. He was a genuine lover of plants, and many would apply the word "wizard" to define his genius, though I think the appellation of the word "magician" would be more nearly the proper title to give him. The plants with which he worked, I confidently believe, knew and loved him, and the magic touch of his hand brought forth responses such as no man had ever before been able to obtain.

The best monument to his memory are the wonderful plants he left to the world as its inheritance. His life was filled with good works and he left the world better because he had lived in it.

Mr. J. T. Lovett, of Little Silver, through whom many of his roses have been introduced, is painfully ill. His son, Mr. Lester C. Lovett, thus writes:

When the Doctor was with my father I was only a boy. I remember him as a real companion, however.

Frequently he took me on long walks, and I can recall now his having pointed out to me certain unusual birds (you will remember that he was always interested in ornithology); and of course he was continually on the alert for odd flowers and plants.

THE PRESIDENT OF THE AMERICAN ROSE SOCIETY WRITES

With Robert Pyle, now President of the American Rose Society, and long the head of the firm of Conard & Jones Co., which has introduced to the public more of his roses than any other firm, Dr. Van Fleet had much contact. Mr. Pyle writes thus of him:

It was Dr. Van Fleet who did some of the first hybridizing of cannas in this country. He was associated with Antoine Wintzer at West Grove in 1893, and indeed it was really Dr. Van Fleet who started Wintzer on his career of canna-hybridizing.

I shall not soon forget the visit he paid us last summer, a glimpse of which is portrayed in the photograph* of him among the seedling cannas in company with Antoine Wintzer, John Watson, and the writer. He was familiar with the parentage of many varieties out of the two thousand or more seedlings there shown, and his profound knowledge of the original sources made his comments most interesting.

Dr. Van Fleet was also interested in gladioli, and has to his credit Princeps and some other notable strains. His deepest interest, however, was in roses. As far back as 1893 he had been hybridizing among the Rugosas, and even before that, when in Ruskin, Tenn., he had made numerous crosses.

It was from among a bunch of these hybridized seedlings that the Doctor had grown in Ruskin, that the bright eye of J. Horace McFarland caught sight

*See Plate IV, opposite.

PLATE IV. DR. WALTER VAN FLEET in a Canna-Field

Dr. Van Fleet at the left; next, Antoine Wintzer (noted Canna hybridist); Robert Pyle (President American Rose Society), and John Watson.

of a blooming plant of the American Pillar, the introduction of which had been under discussion for some time. Mr. McFarland's enthusiasm decided the question. It has since found a place in England and France as well as pervading all America. When Dr. Van Fleet was here last summer he showed an intense interest in a large specimen of the American Pillar rose grown without any support whatever.

The same afternoon we motored over to the private estate of Pierre du Pont at Longwood, where Dr. Van Fleet saw the extensive use of his two roses, American Pillar and Dr. W. Van Fleet—the first luxuriantly covering a series of archways, and the second in use for beautifying a boundary line fence extending almost as far as the eye would carry. It was a pleasure to note his satisfaction at seeing these particular rose-children of his so used.

At no time did his eyes light up with greater enthusiasm than when they rested for the first time upon our block of nearly ten thousand Hugonis roses, Hugonis being a great favorite of his.

Year after year, for more than a dozen years, I have had opportunity to visit the Doctor, sometimes in his rose-garden, sometimes in his hybridizing fields, sometimes spending the night with him in his home at Bell. Invariably did I find him of the same steadfast disposition, with a knowledge of horticulture in many of its relations that seemed to me most profound, with ability to appraise values justly in many fields, with gentleness that seemed to harmonize exquisitely with the flowers among which he worked, and with unselfishness and zeal. Putting aside as of no moment things trivial, he seemed to push steadily forward to the goal upon which his heart was set. He had sensed the Nation's need for roses that would do well anywhere in our trying climate, and was working to make the period of bloom as continuous as possible, aiming at the same time for that rugged sturdiness in all his rose productions that is so characteristic of his American Pillar.

No monument that we can raise will begin to mark so appropriately the memory we cherish of Dr. Van Fleet as do the thousands upon thousands of Dr. Van Fleet roses that are and will be planted about the homes throughout this nation.

Dr. Rodney H. True, of the University of Pennsylvania, adds further light to some of the statements previously made about Dr. Van Fleet, in some remarks made to the President of the American Rose Society:

As a young man, Dr. Van Fleet went to South America, serving as a woodchopper on the gang that helped build the railroad along the Amazon River to the Falls of the Madeira. Interested in this region, he later went back to collect butterflies and birds for Harvard College. Later he crossed the Isthmus of Panama when DeLesseps was working at his canal, the purpose being to make photographic record of the work, wherefore he carried his camera on his back the whole way. Van Fleet gave up his work as a doctor because he disliked the horrors of setting broken joints and patching up injured men which came his way when he was operating for the Pennsylvania Railroad, and because he was drawn by the passion for plant improvement which became his real life-work.

DR. VAN FLEET'S HUMANITY

Associated with Dr. Van Fleet in the Bureau of Plant Industry of the Department of Agriculture was Prof. L. C. Corbett,

Horticulturist in Charge, to whom, indeed, the Doctor directly reported. From a letter breathing his sorrow at the loss af his friend, the following paragraph is taken:

Dr. Van Fleet's experience in the various parts of the world and with different peoples, together with his training and experience as a physician, developed the human element in him far beyond that possessed by the average individual. Had he not been of an artistic temperament I doubt if his work with plants and with human beings would have been as important or as far-reaching. But, being of such a temperament, he won the love and respect of all of his associates, and the results of his work are marked evidence that plants responded to his touch the same as did the human kind with whom he came in contact.

THE OTHER GREAT ROSARIAN

The respect of one great rosarian for another is shown in these few words from Mr. E. Gurney Hill, himself the most noted American producer of Hybrid Tea roses:

I considered his work of the greatest value and in a class unapproached by any other hybridizer. His three great roses, American Pillar, Silver Moon and Dr. W. Van Fleet, will be planted from the Atlantic to the Pacific. His plans were wise, and he sought to improve the garden rose of America, for he realized and often referred to the poverty of hardy roses for the colder sections of our country, and to this class he gave the utmost effort and the closest attention.

SAFEGUARDING DR. VAN FLEET'S WORK

Natural concern has been expressed as to the safeguarding of the work so suddenly terminated, and to which Dr. Van Fleet had devoted much time during his later years. Inquiry of the chief of the Bureau of Plant Industry, Dr. W. A. Taylor, brings the following reassuring statement:

You may rest assured that the rose-breeding work which Dr. Van Fleet had under way at the time of his untimely death will be safeguarded by the Department in every practicable way. The material which he had already developed to the point of final testing will be continued under observation, and every possible effort will be made to accurately appraise the individual seedlings under test. The seeds which are in flats and pots and the new seedlings that have not yet reached blossoming age will be carefully guarded and critically studied as the seedlings develop.

It is apparent that this quiet, human scientist, whose every effort was to produce for the good of mankind while avoiding for himself any notoriety, has very deeply impressed himself on his generation, and that, as is usually the case with really great men, his fame will steadily increase as the days go by.

"What New Roses Does America Need?"

IDEALS GATHERED BY THE EDITOR

THE published list of the world's rose introductions found elsewhere in this Annual would seem to afford ample opportunity for rose selection. Yet critical examination of these introductions and sad experience with previous introductions tend to the feeling that really valuable new roses are of rare occurrence. Further, the vast majority of the European introductions are simply the repeated striking of the same note in so far as their sources are concerned, and particularly with relation to hardiness and adaptability to the great variations of our American climatic range.

It has seemed, therefore, very well worth while to make inquiry as to what ideals exist among the men of America who know roses, and some of whom live almost altogether with roses. The inquiry sent out early in 1922 by the Editor was in these words:

"WHAT NEW ROSES DOES AMERICA NEED?"

"I would like to have from you a brief answer to this query, stating from your standpoint of acquaintance the qualities that new roses for the United States ought to have in habit, hardiness, color, form, fragrance, foliage and blooming possibilities."

Not all of the friends who replied have made "brief answer," and the limitations of the Annual have consequently required ruthless condensation, for which due apology is made.

The President of the Society of American Florists, himself an acute rosarian and an honored member of the international jury which decided on giving the foreign gold medal to Miss Lolita Armour at the Bagatelle (Paris) Rose Trials in June, 1921, is Mr. S. S. Pennock, and he writes thus:

The first and main thing, it seems to me, is to get a class of roses, particularly of Hybrid Tea roses, that are hardy in our climate and will not kill down during the winter. There then should be good color, no matter of what particular shade it is, and a good, stiff stem. Good foliage is also a fundamental requirement, and, of course, the rose that has full fragrance is much more desirable.

But when all is said and done, new roses are very much like new human acquaintances: they have to be tried out to discover their best qualities, and if an individual develops even but one outstanding virtue, you may have found something that makes your heart warm. So with roses, we must try out the new ones, for you can never tell when you will strike a winner.

Mr. F. L. Atkins, Vice-President of the American Rose Society, thus writes:

It seems to me that with the hundreds of varieties of outdoor roses now being grown in this country, color, form, and fragrance are well covered. Vigorous growth, hardiness, and free blooming should be the qualities every rose-grower should keep in mind in his hybridization.

Mr. George H. Peterson, a member of the Society's Executive Committee and a well-known rose expert, writes from his winter home in St. Petersburg, Fla., thus:

First of all, our need in new roses is vigor of growth and hardiness, which will enable them to endure our wide extremes of temperature. Hardly second as a desideratum is the everblooming quality. As to colors, we already have in the various shades of pink an abundant variety to select from. In red, white, and yellow there is still much room for improvement. In the last-mentioned color it did seem a few years ago that Pernet-Ducher was about to give us all and more than we had even dreamed of, but one by one his Pernetiana hybrids have gone into the discard here because of their inability to endure. Superb as they usually are on "maiden" plants during June, the foliage soon thereafter begins to fall off and in late summer and fall the wood dies back to a greater or less extent. I think, therefore, that we need in the three colors mentioned varieties of the perfection of form and fullness of Kaiserin Auguste Victoria, with which is combined the fragrance of Columbia or Hoosier Beauty, and the vigor of growth, the hardiness, and everblooming qualities of Lady Ursula, Gruss an Teplitz, and Radiance.

The Treasurer of the American Rose Society, Mr. Charles H. Totty, is a close student of roses the world over. It is regrettable that space limitations prevent the printing of all his observations on America's rose needs. Extracts follow:

I predict that Hill's America, to make its debut next season, will take the place of Columbia to a very large extent. The addition of this new variety will make the list of pink roses for the time being quite sufficient.

Yellow roses are popular, and would be much more so if more variety were available. The new yellow Souvenir de Claudius Pernet looks as if it is going to line up in this section as a midwinter forcing rose. We thought that by reason of its infusion of Pernetiana blood it would most likely go to sleep in December and stay asleep until spring. We find we were much mistaken, since it has made a splendid growth all winter, and the color is unapproachable.

We still need a good red—free, easily grown, and not liable to disease—with, in addition to this, a yellow as free blooming as Premier, with the shape and fragrance of Hill's America. Give us these and we will not have a word to say for many years to come.

For new garden roses habit is primarily a most important factor. It must be free-growing and free-blooming, with ample, handsome foliage, not easily affected by black-spot or mildew. Hardiness is, of course, essential, and when we speak of hardiness in a rose for America we must remember that we are speaking of a country of magnificent distances. . . There is no doubt in my mind but that the Hybrid Tea rose will be the rose of the future, even though there be in some locations a question as to its hardiness. The wonderful June roses, magnificent though they are, have had their day.

Mr. J. D. Eisele, the veteran rose expert in the firm of Henry A. Dreer, who has known of roses for a long lifetime, writes thus:

You are no doubt familiar with the rose Lady Ursula. Though it is not at all a striking rose, there is no other Hybrid Tea which under all weather conditions—warm, wet, dry, muggy, and all the other climatic trials we pass through in this part of the country during the summer—stands up so well as Lady Ursula. I have never seen it affected with black-spot. It has good foliage through the summer and is nearly always in flower. One of my associates looked over the garden of a gentleman near Philadelphia in which some two hundred varieties of roses were growing. The rose-raiser said to my friend, pointing to Lady Ursula, "This is the kind of a rose for the average amateur. It is always healthy and always in bloom."

For form of flower and stem, Los Angeles is my ideal. For fragrance, Mr. Howard's new Fragrant Bouquet is unequaled.

The new rose ought to be like Lady Ursula, plus the colors we want.

Mr. Wallace R. Pierson speaks mostly from the standpoint of the commercial grower. Elsewhere will be found his words with respect to his exceedingly high standards which caused him to withhold from greenhouse distribution the new rose, Montgomery's Priscilla. Mr. Pierson writes:

We need a white rose with a flower of as good form as Double White Killarney, but white, not green, and with a growth as good as Butterfly or even Columbia.

We also need a red, a crimson, and a yellow, all according to the above prescription. Then we should be happy!

Undoubtedly the dean of American hybridists for greenhouse purposes, and the father of some roses that have satisfactorily invaded the garden, Mr. E. G. Hill, whose Hill's America is pictured elsewhere, and whose delightful rose reminiscences are also in this Annual, thus writes:

New American roses should prove immune to the dread black-spot, which disease is the one great obstacle to successful rose-culture in the great Middle West. The introduction of blood from disease-resistant varieties or from other species should help in the production of a class combining only the best qualities of present Hybrid Teas.

Then there is insistent need for a good yellow rose for indoor winter forcing; a rose having the color of a perfect Sunburst without its limitations. Miss Amelia Gude is an approach in this respect.

Also, we need a fine forcing red variety combining the good qualities of Richmond with the form and finish of Hadley. Perhaps this last rose is in sight, and not very far away.

The rose Souvenir de Claudius Pernet has great possibilities as a worthy addition to our garden varieties, though most of the Pernet type have inherited the weaknesses as well as the good qualities of the Persian Yellow.

From Chicago Mr. J. C. Vaughan submits ideals which are not at all indoor ideals. They are thus stated:

The new roses should have sturdy, branching habit and be hardy enough to withstand winters in the Chicago latitude with slight protection. We need

clear, live, distinct shades of color. (We have been long waiting for a deep, clear yellow and a scarlet like General Jacqueminot, with improved habit.) There should be distinct fragrance, and leaves of good substance, on a plant of fairly compact growth. Most important is a free-blooming habit, not a cropper.

Turning now to the amateurs, let us begin with the words of Dr. Robert Huey, after a lifetime of close and critical observation (see portrait, Plate XI, and sketch on page 158):

"What new roses does America need?" is a difficult question to answer, and the reply depends somewhat on the climate.

For eastern Pennsylvania and similar latitudes, a hardy everblooming climber, bearing flowers of good size and substance, is greatly to be desired; a rose similar in growth, productiveness, fragrance and beauty to Marechal Niel as grown in our southern states, or to Gloire de Dijon as in the south of England. The nearest approach to this ideal that I know of is Reine Marie Henriette, but that variety is not a continuous bloomer, nor is it entirely hardy.

We are well supplied with excellent roses in the Hybrid Tea and Hybrid Perpetual classes. Let us hope that the attention of our hybridizers will be directed more especially to the development of the everblooming climbers. The rose, Mrs. George C. Thomas,* for which Captain Thomas was awarded two gold medals at Portland, Ore., does splendidly on the Pacific Coast, and I hope he may develop one equally good for the climate of eastern Pennsylvania.

No amateur in the United States is more observative and critical than Mr. Charles E. F. Gersdorff, of Washington, whose ideals follow:

My ideal for new garden roses for the United States would be one embodying the hardiness of Frau Karl Druschki, the habit of growth and free-flowering propensities of La Tosca, the size of bloom and stem of Radiance, and the fragrance of Climbing Souvenir of Wootton. The colors should be clear and lasting, and if several, should blend well. As to form, I am not particular, for a single rose has value, in its proper setting, equal to that of the double one. The bloom must, however, be durable. The foliage should be disease-proof, should clothe the plant fairly densely, and above all things should be very persistent. The new roses should have value, both for the garden and for cutting.

Those who have visited Egandale, at Highland Park, just north of Chicago, and have enjoyed the wonders of its garden and the equal wonder of its picturesque and humor-loving creator, Mr. W. C. Egan, know that he is always in sorrow because he cannot grow roses as he wants to in that climate. From his answer to the question are culled the following items:

The ideal qualifications we should aim at in the production of new outdoor roses for this section include, first of all, an ironclad constitution.

The greatest want we of this section feel is a reliably hardy climbing rose. The influence of golfing and automobile touring has caused an exodus of cityites to suburban towns, and the first thing they want is a climbing rose. They plant one, and if lusty it starts into growth. They watch it with care, but nary a bloom greets their eye, for it blooms only on the old wood. Winter comes, accompanied by Jack Frost, who quietly appropriates the new growth, often

*See Plate XIII, facing page 125, showing this rose in color.—EDITOR.

taking all the wood to the ground-line. Next spring the blackened wood is stared at in sorrowful silence, but if the roots have been protected the new growth soothes their sorrow and inspires new hopes. Next winter Jack Frost again uses his scythe, and in despair an ampelopsis replaces the rose.

Foliage is an important matter, and all roses that mildew badly or are subject to black-spot should be eliminated.

As to color, tastes differ, but if we eliminate man, who generally likes any color as long as it is red, and consider only woman—God bless her —some shade of pink probably pleases the majority. A coral-pink like Los Angeles is a great favorite. Of late years I have noticed an increasing fondness for yellow.

The ideal form is, of course, the long-pointed buds like those of the climber Dr. W. Van Fleet, opening into a deep, full-cupped flower.

Fragrance is an essential feature. Its absence suggests disappointment. Hand a lady a rose, and it instantly finds its way to her nose by the shortest route, as if by instinct.

Mr. George R. Mann, of Little Rock, Ark., is an investigator and a successful rose-grower. His answer is quite in point:

My ideal rose would be one that in habit was a strong grower and would throw out shoots from the base of the plant like Radiance and Willowmere. For this climate it should be hardy enough to stand 10 degrees above zero without protection. It ought to have a solid color, shaded in tones of the same color, and the color should stand the sun and hot weather. Good examples of this sort of endurance are Dr. W. Van Fleet, Columbia, and Paul's Scarlet Climber.

In form, the ideal rose would be medium large, high centered, with about 45 petals, should retain its form in heat and should be long lasting, both on the bush and when cut. It should have fragrance equal to that found in Lady Alice Stanley and Duchess of Wellington.

The foliage should be enduring, and not subject to mildew or black-spot, like American Pillar for example. This ideal rose should bloom every month, with a minimum of about 50 blooms during the season.

The above is what I should like to have, but I am afraid will never get!

Prof. David Lumsden, formerly of Cornell University and later doing superb work at the Walter Reed Hospital, near Washington, is now Horticulturist to the Federal Horticultural Board. He writes:

Crosses between some of the present Hybrid Tea roses and representatives of the Rugosa, Provence, Damask, Moss and Austrian Briar classes offer a fertile field for the hybridist toward obtaining hardiness. The ideal rose must have freedom and vigor of growth, free-blooming qualities, and the color, a dominant factor, should include clear and definite self-colors and their subdued tints and hues. The ideal garden rose should have its foliage appearing close to the flower, which should be fragrant. Disease-resistance is a vital point.

I emphasize the importance of the need for a race of roses particularly suitable from a landscape standpoint for the adornment of many ugly embankments.

There is work laid out for the hybridist in these suggestions. Who should be discouraged, or fear the virtual attainment of the ideals above expressed, after considering what has been done in the last two generations in advancing the rose!

An American Rose Society List of Best Varieties?

By CAPT. GEORGE C. THOMAS, Jr., Beverly Hills, Calif.

Editor's Note.—Members of the American Rose Society need no introduction to Captain Thomas or his work. Devoting time and means to accurate and orderly rose research in the East for many years, and now in the West; buying, testing, and recording the performance of every rose obtainable anywhere; himself carrying on extensive and systematic hybridization and producing varieties of real merit (see the 1921 Portland awards announced elsewhere in this Annual, and the reprinted color plate of his lovely "66 H," now named for his mother, Mrs. George C. Thomas), the Captain is warranted in writing, as he has done, with frankness and vigor about the need for authoritative lists of varieties suited to the various sections of the country.

It is all too true, we fear, that the commercial rose producers, for the most part, do not read or follow the findings of their customers, the amateurs. The Editor could tell some experiences in this direction that confirm the Captain's statements. The need is great, and the opportunity even greater. Hope is felt that the increasing strength of the American Rose Society will make possible the institution of such tests as would necessarily precede the formulation of the desired lists.

IT WOULD seem that the time had come when the American Rose Society should publish lists of the best varieties of roses, such lists to be decided upon by a representative committee, and to be so divided that all parts of the country would be provided for.

In the past it was possible for experimenters and growers to give lists of roses suitable for one section of the community, while other sections looked after themselves in like manner. Today people are growing many roses where aforetime there were few, if any, planted. Such places have widely varied rose conditions; yet we continue to use the experience of the sectional experimenter and nurseryman, or even worse, we import something that does well in the Tropics or at the North Cape and expect the best results here.

At the present time we grow entirely too many poor roses—poor roses from many causes, but mainly poor because they are ill chosen by the buyer and ill chosen by the seller. Both are to blame. The buyer often insists on an old type that is obsolete; for example, the widely grown Crimson Rambler of mildewed memory. The grower must have it to sell plants, otherwise

PLATE V.—An Unnamed Van Fleet Hybrid Rose, "W.C.237," to be introduced through cooperation between the Federal Department of Agriculture and the American Rose Society. (See page 49.)

the buyer goes after said Rambler elsewhere. Of what use for grower or experimenter to suggest the far superior Excelsa? The order is for Crimson Rambler! On the other hand, the seller seems in many cases to insist on listing inferior varieties, and, worse than that, on using inferior stocks.

In 1900, when the writer planted his first bed of roses under the advice of the dean of American amateur rose-growers, Dr. Huey, the rose catalogue differed widely from that of today. Dr. Huey had planted the first bush of Killarney in America; he had tested everything in roses up to that time. It was easy for him, with his records, to say which six roses were the best, and in giving the names of six roses there was no argument.

But the rose-list increased rapidly. In 1914 it was extremely difficult to select the best six or the best sixteen roses, and this was one of the main reasons for the publication of the "Practical Book of Outdoor Rose-Growing" after fourteen years of experiment and test. Again, a few years later, it was increasingly perplexing to choose the list of best forty-eight garden roses.

There can be no question but that today such a list is a vital necessity. In the writer's mail come letters from all parts of the country asking for information. Lists of roses are the subject of most of the queries. The last very interesting letter was from Oklahoma, where the rose conditions are exceptional, and where exceptional roses and exceptional methods are required to obtain good results.

The work of many painstaking amateurs and professionals in the American Rose Society has cleared the atmosphere to some extent, but it needs only a casual glance at most rose-gardens or at many catalogues to see the need for a standard official list, sent out by our Society, and ready to be followed by rose purchasers.

Why is it that so many untried, duplicate, and inferior varieties are grown? Why is it that so many wonderful kinds cannot be procured? Take one example of this in the Hybrid Tea rose, Jacques Porcher: Where can it be bought in quantity? What amateur grows it? One might safely venture the opinion that no grower can supply a hundred plants of it, or that not a dozen amateurs can boast of having its beauty in their gardens.

In how many catalogues does the name of a single of the winning roses at our Portland (Oregon) test-gardens appear? Certainly it would be difficult to find a catalogue which offered the first and second winners of each year. Yet it is not difficult to purchase European winners, most of which are totally unsuited to our conditions. Why is this so?

Roses such as Jacques Porcher are suited to nearly every condition; its name flashes into one's mind with a host of equally wonderful "out of print" varieties crowding after, and the worst of it is that "out of print" means inability to procure the rose by the general public.

"Getting right down to brass tacks," there are several reasons why the present condition exists. Let us set down a few of the most obvious. New varieties, tested in Europe for European conditions, come to this country and are sold broadcast from the Atlantic to the Pacific. Even when received in well-grown plants they are generally worthless, save in favored localities, which cannot be discovered without experimentation; but coming, as they often do, as small, weak, grafted "fingerlings," or weak because they have been propagated from the weak growth of a yet unestablished discovery, they are quickly discarded. Planting such roses is as absurd as trying Marechal Niel in Maine or Crimson Rambler in California.

A rose is tested by some careful experimenter, found good, and its merits made known by an article in the Annual; yet it may never thereafter be heard of. Is it true that the rose-growers avoid reading the Annual, and thus lose the common-sense business opportunities it presents?

Everybody admits that certain stocks are best for certain classes of roses, yet we persist in buying and using all sorts of unsuitable stocks, not to speak of some own-root abominations.

A new rose may make a hit in California, and succeed to a certain extent in New Jersey. It is at once sold throughout the land, perhaps on a stock which thrives only under certain conditions. Who can tell what it will do in northern New York?

There are certain roses suited for each section of the country, and for most of them there is a suitable stock. Beyond this the average home grower does not care to go. Experiment, collection, and duplication are not for him; he requires the standard

varieties which will produce results at his home. He can try out a few novelties after he has started the certainties to growing, for any real rose-grower wants to experiment.

Let us give the novice an official list, a list of roses suited to the various general climatic divisions of the whole country. Let us advertise this list through the Annual, through trade papers, and through the catalogues of growers wide awake enough to see the good business of it. Such a list would work to the advantage of all, buyers and sellers alike; it would be better for everyone to be able to select with reasonable certainty and to buy and get what he has selected.

We have begun to have test-gardens throughout the land, and we have willing amateurs to aid in the work—for example, Dr. Huey in the East, and Mr. Currey in the West, with hosts of others. There are plenty of experimenters all over the nation who would gladly take a few roses to test for the Society, returning reports on them. Let the Central Test-Garden Committee select a list to be tested in each district, and thereby institute work toward securing the best rose-list for each locality.

If such lists were obtained, and advertised by our Society, the rose public would demand the listed varieties, which the dealer would surely be willing to supply, just as he is now willing to sell the dismally mildewed Crimson Rambler.

If we pull together, we can eliminate the unfit, the untested and the mere duplicates in roses from our gardens, save where the rose-grower prefers to grow them, knowing their lack of merit.

We will need to prune our lists to the really best in all classes, cutting out the mediocre and the duplicates, and retaining only the sterling varieties which we know will produce worth-while roses.

Incidentally, the creation of such lists will make membership in our Society even more valuable than at present, and it will aid us to build up our membership the country over.

Perhaps this is a "large order," but surely it is a worthy effort to begin. We can, eliminating known errors in the rose-lists, set up the high ideal of providing lists of tested roses for every garden in the land—east, west, north and south. It is worth while, surely, to thus attempt to make the rose really universal in America.

A Model Back-Yard Rose-Garden

By PAUL A. KOHL
Floriculturist, Missouri Botanical Garden, St. Louis, Mo.

EDITOR'S NOTE.—Familiarly known as the "Shaw Gardens," the great and well-conducted Missouri Botanical Garden, in St. Louis, provides opportunity to see the plant-life of much of the world. The Editor was delighted, a year ago, with the four model back-yard gardens mentioned and Mr. Robert Pyle, President of the American Rose Society, was equally delighted on a recent visit. Mr. Kohl kindly tells us of the plan and make-up of the model rose back-yard planting, and Dr. George T. Moore, the Director of the Missouri Botanical Garden, has provided the explanatory sketch.

The formal and extensive rose-garden included in the Missouri Botanical Garden was pictured and described in the 1918 Annual, on pages 39 and 40.

FOR a long time the Missouri Botanical Garden realized that the appearance of the home-grounds in this locality could be much improved. In order to encourage home-owners, and to set an example of what might be accomplished, the Garden, while laying out the Economic Garden in 1917, established four plots on one of the terraces, each measuring thirty by sixty feet. Each of these plots has a hedge of California privet on three sides, and all, except the combined vegetable- and flower-garden, have their beds along the sides, leaving the center an open lawn. As an added attraction, a small pool for aquatic plants has been placed in each of these gardens. In order to give the public a few examples and an idea of what materials to use, these plots were developed into four distinct gardens. One is devoted to a combined vegetable- and flower-garden, another to shrubs and perennials—a type of garden requiring very little annual attention, a third to a rose-garden, and the last to a subtropical garden. For the past five summers these four typical back-yard gardens have vied with each other in claiming the public's attention.

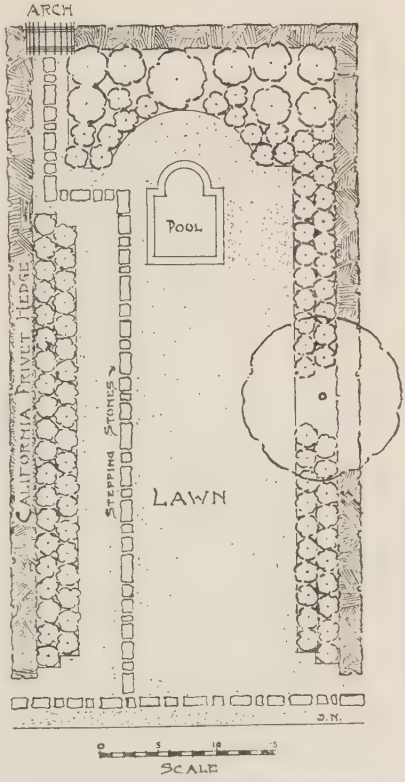
The garden devoted to roses attracts the greatest attention the first two weeks in June, when it is at its best. By the selection of varieties suited to this mid-western climate, it has been made to give a fair supply of flowers throughout the summer and again an abundance in the fall.

It is the purpose of this article to give a list of those roses which have succeeded best in this locality, and which can be

expected to give good results. As for the general culture of roses, little need be said, that topic being thoroughly covered by familiar writers on the rose. A point that might be well to mention, however, is the subject of summer mulching. It is usually recommended that a mulch of some coarse material be applied to the beds about July in order to conserve the moisture and keep the soil cool. In this locality one might follow such instructions one season and obtain excellent results. However, another year would upset all calculations as to the correct time to mulch the beds, and the hottest and driest spell would come very early in the season. Therefore, the rosarian must make his calendar of operations very flexible for each succeeding year, depending entirely upon local conditions. With the unfavorable weather we experienced the past two summers, the mulch could not be applied too soon.

In planning a rose-garden, similar to the exhibition plot in the Economic Garden, it is not necessary that the entire space be devoted to roses. It would not be wise, however, to mix other plants with the roses, the latter being better cared for when grown together. The treatment of a back yard depends a great deal upon the location and whether it is heavily shaded by adjoining structures. If too much shade is cast it is useless to attempt growing roses.

Practically all the yards of city dwellings have some fences which, if not too tight and



The Model Back-Yard Rose-Garden in the Missouri Botanical Garden.

high, are very suitable for some of the climbing roses. Wire net or iron fences are ideal supports for climbers, as they permit the free circulation of air. The following climbers are hardy and while blooming only once in a season are very attractive when in flower: Dorothy Perkins, Dr. W. Van Fleet, Excelsa, Silver Moon, Tausendschön.

In selecting the bush roses it is well to consider for what purpose the flowers are desired. Plants producing an abundance of flowers, and on that account suitable for mass effects, are not always ideal for supplying roses for cutting. If space permits, some of the Rugosas and Hybrid Perpetuals may be included in the plan, but for very small gardens it would be better to confine the selection of varieties to the Hybrid Teas and perhaps a few Polyanthas.

A great number of Tea and Hybrid Tea roses are listed in the catalogues, but only a few of these succeed here with ordinary care. The sudden and extreme variations in temperature at almost every season of the year are very detrimental to many of the finest garden roses. The Hybrid Perpetuals and Rugosas withstand these conditions, and the majority of them can be successfully grown.

Varieties.—A Hybrid Perpetual of outstanding merit in this locality is George Arends. For continuous blooming qualities it compares favorably with the Hybrid Teas. This fact, together with its healthy foliage and long stems, stamps it a rose of merit.

Of the Hybrid Teas, the following are the best for this St. Louis climate: Betty, Florence Pemberton, Gruss an Teplitz, Lady Alice Stanley, Mrs. Arthur Robert Waddell, Mrs. Franklin Dennison, Radiance.

As a supplementary list the following varieties may be added: Ecarlate, General MacArthur, Jonkheer J. L. Mock, Laurent Carle, Mme. Abel Chatenay, Mme. Leon Pain, Miss Cynthia Forde.

It might be well to make mention of Gruss an Teplitz as being the best garden rose for this locality. Its keeping quality as a cut-flower is poor, but for continuous bloom, absolute hardiness, and strong, free growth, it has no equal.

As a group, the Polyanthas surpass all other roses for continuous bloom. Their charm is not in the individual flowers, but the clusters. The best in use here for a number of years are: Katharina Zeimet, Marie Pavic, Orleans, Rödhatte.

The roses in the demonstration back-yard garden have not been pruned heavily, the idea being to maintain mass effect, or, in other words, to have a show garden. The beds along the side of this garden are three feet wide and at the rear approxi-

mately eight feet. The Hybrid Teas are planted along the sides and the Hybrid Perpetuals and Rugosas to the rear. Two plants of Tausendschön, trained to bush form five feet high, are included with the Hybrid Perpetuals. These plants, with their graceful, spreading branches literally covered with flowers, are a charming sight. (See plan, page 33.)

It is the intention of the Missouri Botanical Garden to gradually include in this back-yard garden the newer roses that have been thoroughly tested and have succeeded exceptionally well in this region.

A "Tired Business Man's" Experience with Roses

By CHARLES J. FERRIN, Auburn, N. Y.

EDITOR'S NOTE.—Readers of the Annual have made plain their preference for personal and definite experiences with roses. The following brief story is of that sort, and to the Editor it has another appeal. Actually a New York business man is permitted, for diversion and recreation, to do something else than walk endless miles over lawns banging ahead of him a small white ball. The Editor's pleasure at another's experience in the use of gardening rather than golf for "rejuvenation of tired body and spirit" is related to his mild resentment at some of his presumably sane friends who are astonished that he prefers roses and rose talk to their "caddy" conversation. The illustration, in Plate VI, facing page 36, is the proof of Mr. Ferrin's work.

THE Wigwam," upon an old Indian trail on the banks of beautiful Owasco Lake, in the Finger Lakes section of New York, when it became the property of myself, a "tired," now retired, business man of New York City, was situated on a very small parcel of ground—75 by 300 feet—and was without flowers or shrubs to beautify it.

This "tired" man set about to pleasantly and profitably divert and occupy himself by planting, in the spring of 1919, one hundred or more shrubs—spireas, lilacs, forsythias, weigelas, syringas, and the like—and in the fall of 1919 several beds of perennial plants, together with five rose-beds, in which were set one hundred of the choicest roses procurable. The blooms that came promptly in 1920 were most satisfactory and convinced the occupants of "The Wigwam" that for them the fall planting of roses was best.

In the spring of 1921 two additional beds of fifty roses were planted, with a dozen tree roses set four feet apart in the center of beds of three-foot width. The roses thus set, about twelve inches apart, produced quantities of exquisite and well-developed roses in June. We are willing to ascribe this success to the scientific preparation of the beds and to good care.

This November (1921) an additional hundred rose bushes have been planted, including among them many of the newest roses. We have chosen to confine each bed to one general color, dark pinks, yellows, light pinks, reds, each being segregated. White roses are planted in the yellow beds and also with the light pinks. There are two distinct beds of Polyantha roses, one containing Orleans and Marie Pavic alternating, and the other bed exclusively of Greta Kluis.

Rugosa and its hybrids are segregated and banked against "The Wigwam" itself. In all, one hundred and seventy-eight varieties of roses are represented.

A place for roses to climb demanded some kind of a frame, and a desire to be out in the open enjoying the growth both of plants and ideas developed a delightful little octagonal summer-house where climbers revel and bloom for the love of it. The climbers are Paul's Scarlet, Dr. W. Van Fleet, Dorothy Perkins, Excelsa, Hiawatha, Tausendschön, American Pillar, Christine Wright, and the like—all wonderful growers.

I had no special interest in roses until two years ago, yet today this unpretentious place holds the reputation for hundreds of miles as producing the finest blooms in color and other characteristics that can be viewed in private grounds in western and central New York. There are quantities of roses constantly in bloom from June until November. When asked for an expression as to whether growing roses was worth while, I replied: "Many things in this life to me have been genuinely worth while, but the growing of roses and other beautiful flowers has brought me healthy diversion, a rejuvenation of tired body and spirit, and the satisfaction of developing for others to enjoy (all who come being welcome at my home) one of God's loveliest gifts—the rose."

PLATE VI. "The Wigwam," near Auburn, N. Y. (See page 35.)
1, As it appeared two years ago; 2, As viewed last summer; 3, A "close-up" view.

Can the City Man with a 50-Foot Lot Have a Rose-Garden?

By J. H. NICOLAS, Indianapolis, Ind.

EDITOR'S NOTE.—The question of the title is quite definitely answered by Mr. Nicolas, who brought from his birthplace in northern France that love for growing things which is the essential element for succeeding. The intensive use of the ground, and the way in which it is caused to give garden color for many months ought to interest other city dwellers.

I AM one of those millions of city slaves whose bread is earned in the stuffy atmosphere of a loop skyscraper, and must depend upon street-car transportation. Yet many of us are able to own a small atom of this earth's crust of, say, forty- or fifty-foot front, and it is for the benefit of these brothers that I want to show from my experiences the possibilities of an interesting rose-garden, no matter how small the space.

The soil, clay preferred, can be built up, if necessary, by adding well-rotted cow-manure. All-day sunshine is not necessary; in fact, is injurious in the inland, as the torrid sun rapidly fades roses. A rotation of sunshine and shade is best.

My rose-garden is my front yard, the house facing north; on the east a house built to the sidewalk shades from the early sun (which is beneficial) but a space of ten feet between the two houses admits the light. A large Norway maple shades from the west, so I do not have an over-abundant supply of sunshine; yet the wonderful growth and perpetuity of the roses have made my "fifty-foot-front lot" famous throughout this city. (I should rather say forty-foot front, as ten feet on the west side are taken by the driveway.)

I am writing to combat the idea that a rose-garden is the privilege only of a large country estate. Nothing is more wrong; Lady Rose will flourish anywhere, and everybody can enjoy her company. Another error is that the culture of roses requires a great deal of knowledge; again, nothing is more wrong. Of course, Lady Rose requires some attention, but I know no other plant or flower that will respond more quickly to care and good treatment. I have spread a great deal of

propaganda among my friends and neighbors, and the objection I most often hear is, "But I don't know anything about roses." What is there to know about roses? Nothing more than for any other growing plant. They must be fed, of course, but is there any plant that does not require food? They must be pruned in the spring, and this, I admit, is almost a science, but now most dealers give instructions in their catalogues.

Now what kind of stock to plant, and where to get it. When I hear someone say, "I tried once, but did not have any luck," inquiry usually brings the fact that he had "bitten" on one of those alluring advertisements, a "Trial Collection of 12 Roses for One Dollar," which invariably turn out to be little slips rooted in a hurry under heat, most of which will die as soon as planted in the open ground. Or they have bought at a bargain in some department store discarded greenhouse stock, sure to cause disappointment. My advice is to buy from reliable rose-growers (there are many) and pay the price for two- or three-year field-grown stock. If your means are limited, buy fewer plants, but pay the price for real stock.

As you will probably expect roses from June to frost, the kind to buy then is Hybrid Teas, unless you are located far north, where Hybrid Perpetuals are the only hardy roses to plant. Tea roses should be attempted only in the South. If you buy Hybrid Teas, I recommend that you should insist on budded stock. With very few exceptions the Tea family and its hybrids will not do well unless they are budded on some sturdy and vigorous root system. Hybrid Perpetuals may be attempted on their own roots, but get field-grown, well-established plants. The hardy climbers do well on their own roots.

One must also bear in mind that if budded roses are planted as they should be, the junction being three inches below the surface of the soil, they will ultimately develop their own root-system which will add to the vigor of the plant. My preference for budded stock applies especially to Teas and Hybrid Teas; the Hybrid Perpetuals, Bourbons, Polyanthas, Bengals, and the like, do as well, I believe, on their own roots.

The best prophylactic I have yet found against diseases is to keep the plants growing by frequent applications of liquid manure and a monthly ration of fine bone-meal with a little

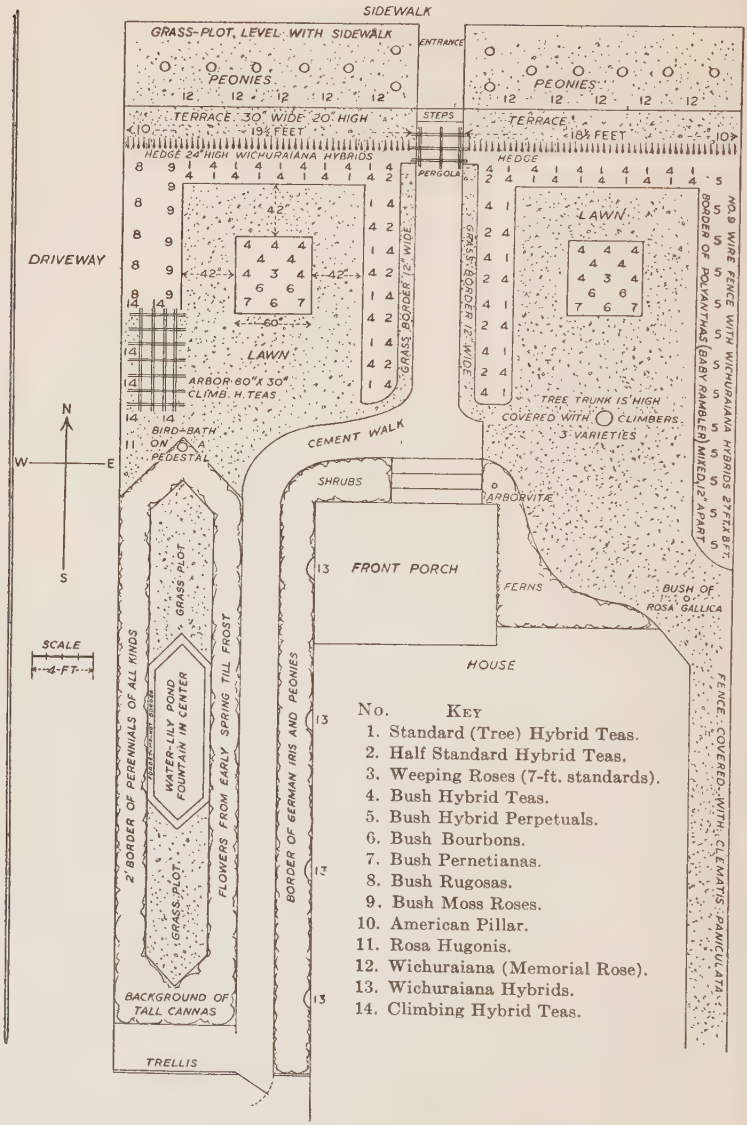
nitrate of soda. Without this, roses have a tendency to become dormant during the hot summer, the foliage becoming dull and an easy prey to black-spot. This summer was especially well adapted for an experiment of that kind, and all through the torrid wave my roses kept on growing vigorously and blooming.

For liquid manure I have a sixty-gallon barrel in which I put the droppings from the chicken-house, keeping it filled with water. This is almost magic in results. Before applying it, I give the plants a liberal amount of plain water, which serves to dilute the manure and to carry it at once to the roots.

As I said above, all rose-bushes must be pruned, and neglect of proper pruning may cause the bush to grow wild and to degenerate. Several people in my vicinity have asked me this spring to go to see their bushes, which, while they grew wonderfully, did not give the roses they used to. I found immense bushes, all gone into wood without check, some of it several years old, and I made a clean sweep of that old wood. "I am timbering, sir," I answered to one who thought I was too radical.

Now I am coming back to the city man's rose-garden. I have made a sketch of my garden merely as a suggestion, hoping that my readers will improve on it. (See page 40.) My available ground at the front of the house is 40 feet from the sidewalk and 41 feet wide. Of this a grass-plot 8 feet from the sidewalk to the crest of the terrace is planted in peonies, with Memorial roses (No. 12) trailing on the ground. On the crest of the terrace is a heavy wire hedge 24 inches high, covered with Climbing American Beauty and Gardenia roses, which droop down the terrace. At each end of the hedge is a bush of American Pillar (No.10). Over the cement walk leading to the front porch, and between the hedges at the crest of the terrace, is a pergola covered with Dr. W. Van Fleet, Climbing American Beauty, and Gardenia. On the east side is a wire fence 8 feet high, 27 feet of which is covered with climbers. In front are Hybrid Perpetuals (No. 5) 2 feet apart, and a border of Polyanthas (Baby Ramblers) 1 foot apart. The rest of the ground is laid out as a formal garden.

A grass border a foot wide extends along the center cement walk; also a bed 30 inches wide with standards (tree), half-standards, and bush Hybrid Teas, which bed also runs parallel with



The City Garden of Mr. J. H. Nicolas, Indianapolis

the front hedge and turns along the side fence (this bed is a little wider). In the lawn, 42 inches from the north, east, and west beds, is another bed 60 inches square, with a weeping rose (7-foot standard) in the center, and Hybrid Teas, Bourbons, and Pernetianas. Back of it is an ash tree which I trimmed to 15 feet high and covered with three varieties of climbers. The main shoots are kept tied to the trunk, and when they reach the limbs of the tree they are allowed to droop down. The same thing is repeated on the west side of the cement walk, except along the driveway where I could not erect a fence but put up a hedge of Rugosas with Moss roses in front; then an arbor, 60 by 30 inches, covered with climbing Hybrid Teas; then a bush of *Rosa Hugonis*, the earliest bloomer.

The west side of the house is covered with climbing roses. I am not in favor of massing one variety of roses in a small garden, and, excepting the climbers and Polyanthas, I do not have two bushes of the same variety in my front rose-garden, although I have many duplicates in the back yard. Each one has a metal label, with name, variety, color, and origin. It is most important that each bush be properly labeled. A rose without a name is not a satisfactory rose.

Now a little divergence from the roses: My perennial garden on the west side of the house, with the little water-lily pond in the center, is worth mentioning. I will not write much about it, only that I wish to show what one can do in "A 50-Foot-Front City Lot." The 12-inch grass-border each side of the center walk is planted with crocuses which are a riot of color as soon as the snow is off the ground, and the lawn (what is left of it!) is strewn with over a thousand daffodils and narcissi which bloom in April and are gone by the time the grass needs mowing, when I cut all together and they come up again the following spring. The two grass-plots each end of the water-lily pond are also bedded with tulips, and when these are gone the lawn is restored for the season.

Let me quote in conclusion the words of the late Admiral Ward: . . . "But unless you, with your own hands participate to a greater or less degree in the care of your flowers, there may be a rose-garden, even a beautiful rose-garden, but it will never be *your* garden."

Climbing Roses in New England

By A. J. FISH, New Bedford, Mass.

EDITOR'S NOTE.—Perhaps because he is a crank about climbing roses himself, having 72 sorts in his own garden at Breeze Hill, the Editor is always interested in Mr. Fish's frank and picturesque observations on the roses in which he so successfully specializes. Considering the New England climate, and the large number of varieties grown, it is apparent that Mr. Fish conducts an important test-garden.

To those who want to see the rose take and hold a place in the shrub border of the garden, with the lilacs and spireas and hydrangeas, the hardy climbers are of immense importance. We do not demand continuous or repeated bloom of the forsythias and the deutzias—why should we expect it of all the roses? Trained as pillars, or as great bushes, some of these climbers are beautiful beyond compare when in bloom, and as sightly or more sightly when out of bloom than the mock oranges and other shrubs we are glad to have.

PERHAPS a brief discussion of New England weather, in connection with the hardiness of roses, will be of interest to the readers of the American Rose Annual. After living in New England a few years, Mark Twain made the following comment on its weather: "New England has too much climate for the size of it; some has to hang over the edges." He also told a weather investigator who was taking notes on the different kinds of weather in the United States, that if he would stay in New England a little while he would have a complete opportunity to experience all known kinds.

For example, to hark back to the hard winter when the thermometer dropped to 18° below, then the tops of the climbing roses were killed back equal to a severe pruning. The next summer there was a very small crop of flowers. The following winter was mild, and there was a very large crop of blossoms on the wood grown the summer before. Then came the winter called "the icy winter." The cold started early and kept right at it, with rain and snow forming a solid sheet of ice a foot or more thick all over the garden. Twelve degrees below was as cold as was registered that winter, and the tops were not killed back as far as during the previous cold winter. The plants started to grow in the spring, but soon they all shriveled up, the stems turning black close to the ground, so

the bushes lost all their tops that spring. My garden was a complete wreck.

Now comes the point of own-root bushes for climbers: By fall I had new tops all grown on my roses, and, the following winter being mild, I had the largest crop of flowers yet, and I exhibited with great success in Providence, Newport, and Boston, also at home, in New Bedford.

I have been specializing on hardy climbing roses for twelve years, and I have now growing about seventy-five named varieties, in addition to several unnamed seedlings. Each year some are discarded and some are added, my desire being to take on more of the later bloomers, in order to extend the season, and in the hope of getting them into the later shows. Many sorts I have discarded were well worth growing, but bloomed at times when I could not use them for exhibition at the shows. I am now depending, as I have said, on the later shows.

One rose I never will have in my garden, as it is a leper, a mildew breeder—the old Crimson Rambler. I have had no mildew to speak of since I discarded it.

I submit here observations on some of the newer climbers. As I have above written, the mild winter of 1920-21 left me with bushes unharmed, and they bore an extra-large crop of very fine blooms. A number of varieties repeated their crops, or continued to flower.

Vondel and Schiller bloomed for us a second time this year—their first "repeat." They are both small-flowered ramblers.

Sanders' White Rambler bloomed twice, also, as it does every year. Gerbe Rose, a large, pale pink, double flower growing one on a stem, throws a large crop at first, then makes a new growth and blooms again on the new wood, thus providing a long season of flowers. Dr. Huey, the lovely semi-double crimson, was very good, blooming early and lasting a long time. For this rose I was awarded a silver medal at Newport, as the best new rose shown there in June.

Bloomfield Abundance was a failure, producing very few flowers and giving no second crop; it is no repeater in this climate. Purple East gave freely of its semi-double, rosy pink flowers with a purplish tint; it is very distinct. Paul's Scarlet

Climber was fine, producing a good crop of nice flowers and making a good growth of bush.

Climbing Orleans gave one crop of blooms and made a good growth of bush; it is more of a climber than most of the sports from dwarfs. White Tausendschön is well liked here; it comes pure white, and is otherwise the same as the original in shape of flowers and thornless growth of bush. A fine dark-colored rambler to follow Dr. Huey is Gruss an Freundorf; its large flowers are very dark red, with a distinct white eye at the base of the petals. It bloomed heavily, keeping on a long time.

One of my favorites is Zephirine Drouhin, a hybrid Boursault, bearing large, bright pink and very fragrant flowers. This rose gave two good crops, covering a long period of flowering. I have had this rose about ten years, and it never fails to bloom at least one crop, but it never before made so much of a growth as this year.

Of course, Silver Moon and Dr. W. Van Fleet did well as usual; they are always at the head of the list, Christine Wright and Climbing American Beauty following closely.

Among the yellow climbers the hardiest and earliest is Goldfinch, a small-flowered variety. Prof. C. S. Sargent is one of the largest-flowered yellow-tinted climbers, and keeps its color better than most of them. The blooms are very double, and keep well, cut or on the bush. Source d'Or also has a large flower and keeps its color well, but the blooms are too soft to keep very long.

Alida Lovett was the climber that made the biggest hit of the season at the shows. It is a very beautiful pale pink rose, shading to yellow at the base of the petals, and has long, pointed buds and elegant foliage. Bess Lovett, a large red, also was well liked. Mary Lovett, a large double white always attracts attention; it is our best large double white climber. Aunt Harriet is another bright-colored rambler, somewhat on the order of American Pillar, but semi-double; it is quite attractive. Fraulein Octavia Hesse is a new hybrid which is very little known as yet. In color it is a yellowish creamy white, and the blooms have moderate fragrance. Though it is a delicate looking flower, it seems to get through the winter here.

Why Not Use Roses as Shrubs?

By THE EDITOR

FOR many years it has been an aggravation—or a mystery—to me that presumably intelligent people persist in thinking of the rose as necessarily an "everblooming" shrub. To be sure, we have accepted the main June bloom of the Hybrid Perpetuals and the climbers in a deprecating way, turning eagerly to the Teas and Hybrid Teas, scraggly little bushes that they are, as the real roses.

The result of this unjustified point of view has been the growing up of an idea that the rose must always be segregated in beds or borders, and that it may not take any place in the shrubbery with other familiar subjects. This is, I admit, the best treatment for the Teas and Hybrid Teas and most of the Hybrid Perpetuals, for their lack of beauty of form and foliage is thus measurably concealed.

When we look at the great rose family outside the narrow limits of the classes referred to, a different situation and other possibilities appear. With sixty distinct species of roses native to North America, and with half as many more available to us from Europe and Asia, with the modern hybrids of and into some of these species, there is really a great range of roses for shrub use.

To be sure, these other and sturdier roses that can stand alone or mingle on equal terms with the lilacs and spireas and deutzias and viburnums are not "everblooming." Neither are the other good shrubs we love and use, nor is there any disparagement of them because they give us their glory of bloom in due season, and then subside into the varied greenery which adds to the charm of a good garden.

Would we want the brilliant show of the forsythia to continue all the spring? Is not a month of mock-orange, a fortnight of lilacs, the ten-day show of the magnolia and the deutzia enough to justify the room these garden favorites take? Who, indeed, having once realized the true glory of a garden, wants perpetual bloom without change on any loved favorite? To me,

the change of my garden from day to day, from week to week, is its fascination, its charm, and much of its value. The day is over of the "carpet beds" which might as well have been made of painted tin as of the changeless coleus, achyranthes, alternantheras that looked no better and were more trouble!

If, then, we admit that a rose that will give us a breath-taking burst of bloom for an enchanted week is worth the room it takes, having good green foliage and graceful form to commend it for the other fifty-one weeks of the year, it may be desirable to examine into sorts and uses for the queen of flowers as a hardy shrub.

In earlier issues of this Annual much attention has been paid to the use of the rose in the landscape. Charles Downing Lay considered it in the 1916 Annual, as did Wilhelm Miller in 1917, and in 1918 Warren H. Manning developed the value of the rose in broad park plantings.

No one, however, has discussed it for the smaller gardens, where it may take place beside the cherished shrubs—some, like the overdone hydrangea "p. g.," entirely too frequently cherished!—which afford bloom and foliage and sometimes fruit in succession over all the growing months, and graceful twig forms in the leafless wintertime.

First, let us take account of the use of the modern climbers as shrubs. With a little care, they can be trained as "pillars" of four or five feet height, providing opportunity for enjoying many lovely sorts for five weeks or more. Plate VII, facing page 49, shows such a use, and these pillars are more pleasing when out of bloom than any lilac after its flowers are gone. The process of training is simple. A central support is desirable, preferably a piece of discarded galvanized iron pipe planted when the rose is planted. The shoots are tied up to this support, and headed off when they get to its top, or deftly twined about it for a fuller effect. In early spring the side shoots are pruned to less than a foot in length, and this leaves plenty of blooming wood to clothe the pillar with snow or flame, with cream or the rosy tints of dawn, as the variety offers.

Each year all the old wood is cut away and the new shoots trained in as before. To rose-lovers who lament a lack of room for trying out the superb new climbers mentioned elsewhere in

this Annual by Mr. A. J. Fish, I commend the pillar method, for they can be kept at the ends of borders, or even in the vegetable-garden.

Aviateur Bleriot, Hiawatha, Purity, Ghislaine de Feligonde, American Pillar, Evangeline, Milky Way, and two-score others as good—try them and rejoice!

A symmetrical shrub can be made out of one of these climbers without a support by turning in the long shoots upon each other to form a sort of balloon shape, with proper trimming and tying. The result is gorgeous.

I hardly need mention the hedge possibilities of these modern climbers which make Crimson Rambler only a painful memory, and take one away from the dead monotony of repetition we have in Lady Gay and Dorothy Perkins—too much of a good thing! American Pillar, Silver Moon, and Dr. W. Van Fleet will work into a self-supporting hedge that is wholly impenetrable, if full six feet or more of width is allowed, and the flower show is superb. By planting them so they mix into each other the variety and length of bloom are increased.

It is, however, of the actual shrub use of roses I started to write. I am restricted considerably by the reluctance of nurserymen to either grow or offer many fine species of roses for shrubs, and may therefore only treat here those that can be had.

Easily supreme as a shrub is *Rosa Hugonis*, that lovely single yellow rose from West China which got into and around America before the Federal Horticultural Board began its bug-crazy restrictions. Hugonis is a graceful shrub, growing rapidly to a form generally resembling that of the familiar Van Houtte spirea, and blooming gloriously for full two weeks before any other rose is awake to the spring. After blooming, its pale-green foliage on its curious red-brown twigs continues until fall turns the leaves a soft purple. This rose is good in the border exactly twelve months in the year, for its twigs are beautiful against the winter's snow.

Hardly reaching to four feet, and spreading or "stooling out" as it grows, the Altaica form of the Scotch or Burnet rose (*R. spinosissima*), now sometimes known as *R. altaica*, is a very lovely shrub, from the earliest spring days when its abundant green leaves unfold until a real freeze removes them in late fall.

Its great single white flowers almost hide the foliage for awhile. This Altaica rose is *par excellence* as a low shrub.

Another of these dwarf wild roses is *R. lucida alba*, or *R. virginiana alba*, with shining leaves and lovely white flowers, followed by decorative and enduring red fruits or pips.

Tall, if left go up, and thorny enough under any conditions, the Japanese form of *R. multiflora* is a conspicuous adornment in a broad border. A cloud of small white flowers covers it in June.

The Prairie rose (*R. setigera*) has good shrub quality, and grows to about six feet in height. Its pale pink flowers are exquisite, its grayish foliage is distinct, and it lends to any garden an air of stability, of naturalness. Its English parallel, the Eglantine or Sweetbrier, *R. rubiginosa*, goes well with it in the shrubbery, and in addition to the charm of its pink flowers there is to commend it the exquisite fragrance of its foliage. Hybrids of this old Sweetbrier, known as the "Lord Penzance hybrids" and traveling under names right out of Sir Walter Scott's Waverly novels (as "Amy Robsart," "Flora McIvor," "Lucy Ashton," etc.), have larger flowers and can be used in the same way.

The only definitely yellow hardy roses prior to the coming in of *R. Hugonis* were the so-called Austrian Briers—Harison's Yellow, Persian Yellow, and Austrian Copper. These are hard to manage, because they get "leggy" and bare, and are averse to ordinary pruning. Yet they do a service and take a place not covered by any other shrub, and are worth the little extra bother. Their blooms are early, exceedingly sweet, and of the clearest yellow.

The grand Rugosa roses and their hybrids are superb bush subjects for the shrubbery, save, perhaps, the rampant Conrad Ferdinand Meyer, the ten-foot canes of which need other treatment (which they well repay, as noted in previous issues of the Annual). These Rugosas have effective foliage, "rugose" or wrinkled, dark green and enduring, and their showy fruits follow lovely and fragrant flowers. They are at home as good shrubs, and the new F. J. Grootendorst is a notable sort, a hundred times more satisfactory to use than its awkward Holland name is to say! It is a continuous bloomer of flowers that look like

PLATE VII. Climbing Roses used as pillars. To illustrate "Why Not Use Roses as Shrubs?" page 45

red carnations, but, as with all the continuous blooming roses, there is no great burst of bloom at one time.

If the nurserymen were ready with the plants I would tell of other rose species of value as shrubs. Later, I hope to see come into commerce the superb hybrids on which our greatest rosarian, the late lamented Dr. Van Fleet, had lavished his knowledge, experience, and insight. The first of these to be put in propagation for introduction is Mary Wallace, illustrated in the 1921 Annual as "W. C. 124." It is curiously enough, either a climber or a shrub, according to its handling. As it grew under Dr. Van Fleet's critical eye, in the poor soil to which he designedly subjected his seedlings, it made a wonderful mound of glossy foliage, covered early with very large, semi-double, rose-pink flowers, and followed later with some fine buds in summer and fall. It will count!

Facing page 29, as Plate V, is pictured "W. C. 237," another of the Van Fleet hard-luck roses, good as a shrub and of lower growth than Mary Wallace. Its lovely and informal flowers are a luminous cherry-red in color. This wholly different rose is next in order of introduction, I believe, though those of us who saw it in full vigor even after the Easter-Monday freeze of 1921, most earnestly wished it might be coming along with Mary Wallace.

There are also growing at Bell many unnamed wonders among the hybrids of *R. Hugonis*, *R. altaica*, *R. spinosissima*, *R. Engelmannii*, *R. Moyesii*, *R. Soulieana*, and others, with *R. Wichuraiana* and with robust Hybrid Teas like Radiance.

These, it is expected, are to be made available through the American Rose Society's system of distribution, arranged with the Bureau of Plant Industry of the Department of Agriculture, and to accomplish which equitable distribution the Society has been legally incorporated as a corporation "not for profit." These roses ought to put the rose into the American garden and "dooryard" (Dr. Van Fleet's own word for his aim) as never before, always provided we American folks can be willing to take the rose as to bloom on the basis on which we take deutzias, spireas, and other good shrubs.

Budded and Own-Root Roses

By CAPT. GEORGE C. THOMAS, Jr., Beverly Hills, Calif.

Editor's Note.—Readers of the successive issues of this Annual have noted the continual dispute as to the comparative merits of own-root and budded roses. Those of us who look over the whole rose-growing nation have long realized that there could be no hard and fast determination of the main question, and that the subject demanded careful and continued regional study and observation. Captain Thomas, a painstaking and unprejudiced amateur, has written much about the question of stocks, both in his excellent "Practical Book of Outdoor Rose-growing," and in the Annual, and since his removal from Pennsylvania to California he has continued his experimentation and attention.

This article, partly printed first in *Portland Roses*, and amplified by Captain Thomas for the Annual, sets out the whole case.

Readers are referred also to Mr. Hume's "Rose Stocks and Root Systems" in the 1921 Annual; to Mr. Bentz's "Experience with Own-root vs. Budded Roses," in the 1920 Annual, and to Dr. Van Fleet's "Stocks for Rose Propagation" in the 1918 Annual.

THE discussion on the better of the two methods, budded or own-root roses, has raged with more or less frequency for many years, and, outside of a few amateur experimenters, the evidence put before the public has been contributed in most part by persons who were interested financially in one method or the other. Such evidence, while perhaps mostly sincere, cannot be taken too seriously. The many books on roses go into this subject very fully; each writer takes a side and proves this side by data and argument, but such proof is always limited by exceptions.

It was my first intention to give extracts from the literature of the rose, quoting from the different books and also from the English and American Rose Annuals. Furthermore, I had the interesting data of such careful and well-known amateurs as Dr. Huey, Admiral Ward, and others, all of whom in their work had only one goal—the truth for the betterment of amateur rose-growing for the home rose-grower.

When, however, this record had been carefully boiled down until it was in tabulated form, I was struck by the unexpected fact that the great part of such evidence, with perhaps a few minor contradictions, all agreed, and went far to prove that while each writer took the side of the case as he saw it, yet as a whole the tabulated matter proved a new viewpoint. In other words, everybody had agreed to disagree, but in

disagreeing everybody agreed! It was necessary to overlook the side of the fence to which each writer belonged and to consider only his unvarnished facts. The tabulation, which was abbreviated, made this construction possible.

First, I will state these facts broadly, and, taken as an average, such deductions not agreeing to the letter with any one writer, yet nevertheless being proved by the evidence of all, but given in a different form which does not contradict the verdict of any writer. After giving this summary I will append my own findings.

First, then, to the average facts.

Own-Root Findings.—A great many roses may be successfully propagated as own-root plants.

Some roses do as well so grown as by any other method; a few are claimed to do better.

Some roses will fail when grown on their own roots.

Budded Findings.—A great many roses may be successfully propagated by budding.

Some roses will do better so grown than by any other method, and certain stocks are superior for certain varieties.

No rose will fail when budded.

Practically all types of hardy ramblers, species, and subspecies do splendidly on their own roots. The strongest of the Hybrid Perpetual, Hybrid Tea, and Tea roses will do well as own-root plants under certain conditions.

Almost all of the strong ramblers and species do as well on their own roots as when budded, and as a class they give better results so grown. Certain special roses are cited as doing better as own-root plants than as budded; for example, one authority claims La France does not "ball" in bud when so grown, whereas it does ball with him on brier. Outside of the strong-growing hardy ramblers and species, superiority of own-root plants is problematical.

A great many very beautiful weak-growing varieties fail on their own roots. A number of roses do not root well, and it is difficult then to propagate by cuttings.

Practically every rose may be successfully propagated by budding, and when budded will do as well—generally better—than own-root plants, except the hardy ramblers and species.

For exhibition roses the best results are obtained by budding. Weak-growing Hybrid Tea and Tea roses are much finer when

budded, especially in cold climates; moderate growers are improved somewhat. The weaker climbing Teas and Noisettes (Marechal Niel for instance), are helped when budded, in many cases such roses showing surprising results when worked on a stock especially adapted to them. All but the strongest of the Hybrid Perpetual roses are better as budded, and the very strongest are only successful on their own roots under special conditions.

It seems to be generally agreed that the Manetti stock is best for the Hybrid Perpetuals. The brier is usually adapted to the Tea. Certain Hybrid Tea roses, especially the poorer growers, and some Hybrid Perpetual and Tea roses as well, give exceptionally fine results on the Multiflora. Exhibition Teas have finer flowers on standards.

No rose fails when budded, but best results are obtained by growing on the stock best adapted. To insure success it is necessary to keep off all sucker growths, and the rose-grower who has not enough industry to do this would not grow roses under any conditions. The depth at which the bud should be planted is also a very important point, as undoubtedly different stocks and different conditions require different depths for the finest results.

To sum up the entire matter in a few words: there is no hard and fast rule, no easy path to great success, and the finest results are obtained in rose-growing, as elsewhere, by the man who takes the most pains.

Our rose conditions vary tremendously; we have every variety of climate. There are certain districts where certain types and varieties give very fine results with ordinary methods of cultivation, while in other districts such classes are of little value, and for any kind of a showing at all must have special care. This applies to the growing of such own-root plants as succeed in favorable locations; it does not apply to the growth of budded roses to so great an extent.

The grower who tries to grow all classes of roses as own-root plants will not succeed as well in all parts of the country as the man who uses only the budded rose.

Undoubtedly the best stock for every variety has not yet been listed. Certainly there is a large field for improvement

in rose stocks and just as certainly a stock which does well in one climate may not always do well in a different climate.

As a general working rule, except with roses specified under the findings above, budded roses are safer unless own-root plants have proved satisfactory and even then the budded plants will give as good results.

Own-root and budded plants vary in goodness. In speaking of them I refer only to the best of both, viz.: American field-grown plants. Any roses propagated wholly in greenhouses, especially those from a race of indoor ancestors, are likely to prove inferior.

Imported budded plants are not to be compared to American budded roses, and budded plants grown inside in pots are an abomination.

The Middle Atlantic States grow Hybrid Perpetual, Hybrid Tea, and Tea roses badly as own-root plants, compared to those produced by the Pacific Northwest, California, and the belt between the Middle Atlantic States and the eastern South about Washington.

Own-root roses, outside of ramblers and species, need a climate without extremes of any kind.

The cold-resisting Hybrid Perpetual is poor as an own-root rose north of Boston in the East; the heat-resisting Tea is poor as an own-root plant in the extreme South, except on the Pacific Coast; the average own-root Hybrid Tea is poor even in the central and most temperate East, compared with budded specimens.

In the Pacific Northwest good results are obtained with own-root plants of the strongest Hybrid Perpetual and Hybrid Tea sorts, although even there the budded plants are superior: own-root Teas are possible, but do not compare with California own-root Teas.

In the sea-coast region of Southern California, the Tea on its own roots is the best own-root rose in this country, thriving in a climate without extremes of heat, cold, or dryness. It is remarkable in size of growth as well as in number of blooms, and although it takes time to become established, it eventually rivals its sister climbing Teas, while with little care it blooms the entire year without needing rest, through the forced dor-

mancy produced by withholding water. In the same region the Hybrid Perpetual and Hybrid Tea sorts are unable to face the extreme of the perpetual growing season with the same equanimity as the Tea, and while they give good results as own-root roses, they do better when budded. With a few exceptions the Climbing Teas and Noisettes do better on a beneficial stock.

The safest and best stocks for Hybrid Perpetual, Hybrid Tea, and Tea roses are as follows:

For the Middle Atlantic States, and in climates with like extremes: Budded Hybrid Perpetual, selected budded Hybrid Tea and Tea.

North of Boston and in climates with like extremes of cold: Selected budded Hybrid Perpetual and Hybrid Tea.

Around Washington and climates with like extremes: Selected budded Hybrid Perpetual, budded Hybrid Tea and Tea, all as first choice; selected own-root Hybrid Perpetual, Hybrid Tea, all as second choice.

In the Southern States, except where there are no extremes of heat or dryness: Selected budded Hybrid Perpetual, Hybrid Tea and Tea.

In the Pacific Northwest: Budded Hybrid Perpetual and Hybrid Tea, selected budded Tea, all as first choice; selected own-root Hybrid Perpetual and Hybrid Tea, as second choice.

In Southern California Coast Region (for remainder of state, see article in 1921 Rose Annual on California rose conditions): Budded Hybrid Perpetual and Hybrid Tea, as first choice over own-root Hybrid Perpetual and Hybrid Tea. In Teas, budded roses are preferable for the weak growers; but the strongest Teas do as well on their own roots as when on a stock.

In climates where the temperature goes well below zero for continued periods (as shown in the Rose-Zone Map published in the 1920 Annual), use only the very strongest of the budded Hybrid Perpetual sorts.

Experiments with budded stocks are not yet complete enough to give positive findings for all varieties, but, broadly speaking, the best-known stocks may be summarized as follows, as relating to the three classes noted:

Briar is good for Hybrid Tea and Tea roses, and is, possibly, hardier against extreme cold than the Multiflora.

Manetti is best for Hybrid Perpetual sorts.

Rugosa is second choice for Hybrid Perpetual roses in the North.

Multiflora is best for weak-growing Hybrid Tea and Tea roses in Middle Atlantic States; is possibly not as hardy against cold in the North as Briar, and gives only fair results in California's southern coast; as properly budded in the collar of seedlings, suckers least of any stock.

Ragged Robin has done well in California, but suckers badly; not as hardy against cold as Briar or Multiflora.

The logical verdict is easy: By all means propagate the kinds on their own roots which are known to do well so grown in your locality. Do not try to do in the Middle Atlantic States what may be done in the Pacific Northwest or in California or Florida, whether it be such an absurd thing as growing a Marechal Niel on its own roots or believing that because Multiflora does well in Pennsylvania it is the best stock for California, or that because Ragged Robin does well as a stock in California it will of necessity be the best stock for Massachusetts.

Do not consider grafted roses as of any great value except to secure quick results; they must not be confounded with budded plants.

The greatest thing for the amateur rose-grower is the experiment garden. The published records of such institutions are most valuable. With such gardens coming into being all over the country, it is wise to find what varieties they recommend and on what stocks they are recommended. Take the advice of the test-garden nearest to you, rather than the advice of someone at a distance, or of some firm which sells roses which have not been tested in your district.

Let us all aid the fine work being done in our test-gardens by men in whom we have every confidence. Thus rose-growing will be advanced and eventually we will have a list of the best roses for each district, with the best stocks on which to grow them.

It is hoped that this little talk on the question of stocks will be of use to the home rose-grower.

Another Experience with Own-Root Roses

By G. A. STEVENS, Cleveland, Ohio

EDITOR'S NOTE.—Constant readers of the Annual will remember the definite quality of Mr. Stevens' experience as previously printed in the 1921 issue, under the title of "Ohio and the Rose-Zone Map." Mr. Stevens provided a table showing the comparative hardiness of roses, including some on own roots. His experiences with a larger number of own-root roses are here, in frank justice to his investigative turn of mind, made available to other members of the American Rose Society.

The Editor feels bound to say, as a matter of simple fairness, that seemingly one main cause of dissatisfaction with the little own-root roses is that often as much is expected of them, in growth and endurance, as of the much more costly budded outdoor-grown plants. Why not measure them in terms of what they give in bloom in one year? We do not buy perennial boxes of candy, but we do perennially—and continually—buy candy. Is not the bloom from one rose for one season worth at least part of the price of one theater ticket?

On page 3 will be found a beautiful sonnet entitled "The Rose," contributed to the Annual by Mr. Stevens.

AFTER writing as I did last year and giving little one-year own-root roses such a black eye, I had to turn around and buy a bunch again this spring. They were planted in a back-yard garden in Cleveland and given all the care a hungry rose-lover would give them when he is denied his own garden. While I have had to be away from them for part of the time, a separate record was kept for each plant for most of the season, and it is submitted on page 59.

A few comments may be of interest: The plants were received in good condition from a Springfield, Ohio, grower on April 15, and were planted that evening. The bed had been carefully prepared beforehand, and, barring the lack of my favorite cow-manure, it was made as rich and mellow as I could make it. They were planted very close together—about eight inches apart—for I have found these baby plants do better, or at least make a much better show when planted closely. If necessary, they will be thinned in the spring, but I need hardly think of that, for the winter will doubtless do it for me. The plants starred in the tables died. Several others might as well have done so; they neither grew nor bloomed. A few did remarkably well. The best were (see table on page 59):

Columbia I—three of the four flowers were magnificent; this

must be a remarkable rose when properly grown on a suitable stock.

Duchesse de Brabant II holds the bloom record of thirteen flowers. I and III were very poor.

Ecarlate I made a very fine bush and gave eight flowers.

Gruss an Teplitz II did not grow much, but had nine flowers.

All three Hermosas were comparatively satisfactory.

Kaiserin Auguste Victoria was the grand surprise. I got as many flowers from II as I usually get from my Kaiserins at home, which are old budded plants. III was accidentally pulled up while weeding with one of those patent weeders and that accounts for the bad record.

Mrs. John Cook gave very lovely flowers which lasted a long time, but not many of them.

Ophelia bloomed fairly well. Note the uniformity of bloom. All three plants gave four flowers. I have noticed this uniformity of Ophelia before. It keeps a solid level of productiveness, and seems to be thoroughly standardized.

Radiance did very well, considering all things. I noticed that the plants of this variety seem to give flowers of a rather richer color than the budded plants.

Safrano, as always, was good. I love that rose!

Yellow Cochet, whatever its right name may be, gave ten very lovely and lasting flowers. [This name is applied to both Alexander Hill Gray and Mme. Derepas-Matrat.—Ed.]

Except Columbia, I would say that none of these plants gave flowers comparable in size to what would be expected of budded plants. They were all perfectly formed, however, and I had little or no trouble from disease or insects.

Note the miserable failure of Duchess of Wellington. Some day, I am going to plant a hundred of that variety to see if I can get one to grow! These four merely existed, and the blooms were insignificant. I notice that in a bed in the Cleveland Rose-Garden, labeled Duchess of Wellington, there is only one plant of that variety growing and blooming. All the others have been replaced with different varieties, with the usual gay indifference to the label.

The roses marked General MacArthur were mislabeled, so the record is misleading as to that rose. These produce flowers

of a beautiful white! I suppose it would be called a yellow in the catalogues, as there is a suspicion of cream in the center. Mr. Binder, of Mineral City, says they are Mrs. Ambrose Ricardo, a variety which he raised last year and admired.

As to the whole list of varieties, it is not the list I ordered by about fifty per cent. That is another exasperating thing about some of these one-year, own-root plant firms. They seem to send anything and everything except what is ordered. Perhaps they never see roses bloom!

Nevertheless, these roses have given me a great deal of pleasure this summer, because I have learned to expect so little of them. I am grateful for every blossom that opens. That is one of the joys of an enlightened pessimism—one is never, except agreeably, disappointed. This doubtless is an acquired taste and would be *caviare* to the beginner or one just casually interested in roses—so I can see no reason for encouraging the planting of this type of plant, and would discourage it to the limit.

As I mentioned before, these plants cost me something over eight or nine dollars. I could have bought at least six two-year budded plants of the best varieties for that money, and had twice as many roses, with half the care and trouble, if that is a consideration.

I am going to do my best to keep these plants over winter, and in this climate, I hope to succeed. Cleveland is in the blessed dotted zone on the rose map, while my home county, seventy miles south, is as blank as Canada. I shall endeavor to keep, or have kept, a record of the survivors and their bloom and report next fall.

As to budding my own roses, I can't say that I've made a howling success of it. I get about fifty per cent to catch, but Binder fares much better. He and I are trying a peculiar experiment this year. Last spring, when he cut the tops from the Multifloras which he had budded the previous fall, he stuck some of the branches in the ground to serve as stakes for the growing bud. All of these stakes took root and grew. He budded them this fall. This is the idea: We have budded a number of Multifloras, both at the root and on the bases of the main branches. Next spring, when we cut off the tops, these inserted buds will be cut off too, and the main branches set out as cut-

tings. If they root and grow like the "stakes" did this year, we hope to save a year in the production of new plants.

I have budded some Pernetianas on Harison's Yellow roots this year. They seem to have taken well. I know they will sucker badly, but I am anxious to see if the relationship of stock and rose will help the leaves or contribute to the growth and hardiness. I have been unable to set buds on *Rosa setigera* or *R. alba*. The Moss roses and Wichuraiana climbers take them very well. I had a number of fine Mrs. Arthur Robert Waddell blooming on Dr. W. Van Fleet this year and last.

I mentioned the Cleveland Municipal Rose-Garden awhile back. Culturally, the garden is well taken care of, but the method of planting is wretched, and a source of annoyance to anyone who tries to locate or identify any particular variety. The layout of the beds is particularly abominable; they are of all shapes and sizes and planted indiscriminately. I believe there is a plan of this garden in Mr. Pyle's excellent book, "How to Grow Roses."

BLOOM RECORD OF ONE-YEAR, OWN-ROOT ROSES, PLANTED APRIL 15, 1921, AT CLEVELAND

ROSE	Plants	June	July	Aug.	Late	Total
Columbia	I		1	1	2	4
	II		1	*		1
Duchesse de Brabant	I					0
	II		1	6	6	13
	III	1		1		2
Duchess of Wellington	I			1		1
	II					0
	III			1		1
	IV				1	1
Ecarlate	I	1	3	2	2	8
	II		*			
	III		3	1	1	5
General MacArthur	I		1	1	1	3
	II			1		1
	III		1	1	2	4
Golden Spray	I		1		*	1
	II		2	1	*	3
Gruss an Teplitz	I	1	2			3
	II	1	2	3	3	9
	III		2	2	1	5
Hermosa	I	1		5	5	11
	II		1	4	3	8
	III	1		4	4	9
Kaiserin Auguste Victoria	I		1	2	1	4
	II	1	1	3	3	8
	III		2			2
Lillian Moore	I	*				
	II			1	1	2
Mme. Butterfly	I			1	1	3
	II	*				
Mrs. Aaron Ward	I			2	2	4
	II			1		1
	III				1	2
Mrs. A. R. Waddell	I				1	1
	II			1	1	2
	III	1		1	1	3
Mrs. John Cook	I		1		2	3
	II			1	1	2
Ophelia	I		2	1	1	4
	II		1		3	4
	III			2	2	4
Radiance	I			2	4	6
	II	1	1	1	2	5
	III	1		1		2
Safrano	I		2	2	7	11
	II		2		2	4
	III	1		1	5	7
Wm. R. Smith	I		1	3	2	6
	II			1	2	3
Yellow Cochet	I	1	1	1	2	5
	II		2	4	4	10
Totals		12	40	67	82	201

*Died.

A Community Flower Show in Kansas City

By LOUISE HOOK
Community Secretary, Country Club District, Kansas City, Mo.

EDITOR'S NOTE.—Those who have visited the Country Club District in Kansas City will need no reminder of the beauty and "livableness" of that community. Miss Hook's story of the 1921 flower show held there is published, not only because of its promise of a "rose tea," but because of the excellent methods used. The judging scheme insured popular interest and is well worth extended trial.

It should be noted that the organization of which Miss Hook is secretary includes some three hundred women, and is the clearing-house for most of the community activities. Flowers and roses, under such use, serve to help make the community a better place to live in.

AN interesting feature of the community life of the Country Club District of Kansas City was the flower show held in Community Hall, May 7, 1921. The show was arranged by the Women's Community Council, in coöperation with the J. C. Nichols Investment Company.

During the fall of 1920, announcement was made in the Country Club District Bulletin, that a flower show was contemplated in the early spring, and the residents were urged to plant bulbs and early spring flowers, prizes to be given for the best garden arrangement and the best display of early and late tulips. The prizes were to be rare bulbs, to encourage and stimulate the interest in the growing of such flowers, thus rewarding in kind for success.

In the spring, two committees were formed, one to have charge of the garden contest and the other to arrange for the flower show. Those residents of the District who desired to have their gardens judged were to telephone the chairman of the former committee when the gardens were at their best, and the committee would visit them on that day and judge them according to their beauty. Many were the visits made throughout the District, and much interest and rivalry were shown in the lovely spring gardens.

The other committee busied itself in arranging for the flower show, making and changing its plans, rushing one day for fear the heat would bring the flowers out so that plans could not

be made in time, mourning the next day over the blackened remains of gardens cut down by the freeze the night before. Finally, on May 7, a lovely show was held at the center of community activities, the Community Hall at 63d Street and Brookside Boulevard. There were more than fifty exhibitors. Tulips, narcissi, daffodils, grape hyacinths, violets, iris, flowering shrubs, pansies, and phlox were there in great array. The hall was decorated with bush honeysuckle and vines and green foliage from the woods. At one end were arranged two beautiful exhibits of hothouse flowers, by courtesy of the florists located in the district. A large assortment of bird-houses attracted the children and the bird-lovers. In every corner of the room hung a bird-cage, its occupant singing and trilling away to add cheeriness to the already festive scene. An orchestra played all afternoon and tea was served in one corner of the room by a committee of women.

A novel feature was the judging by ballot. There was no admission charged, and as each person came in the hall he was given a ballot listing all the classes shown. As he made his rounds, he marked the one he thought the best in its class. This added quite a little to the interest and made the winners the popular choice of those who visited the show. The prizes given were donated by different members of the community, each prize a tool or garden implement of some sort so as to create and stimulate interest in that fascinating occupation—gardening. The constant stream of people seeking entrance to the hall attested the popularity of such a community event.

Another event planned by the Women's Community Council is a Rose Tea, to be given on the lawn of Mrs. Edward O. Faeth, president of the Council, and the adjoining rose-garden of Mrs. Ernest Ellsworth Smith, on Sunset Hill. This garden is famous throughout the city and is a flower show in itself. One hedge of roses is fifty feet long and several others nearly that length. Inside this hedge are found many choice varieties of the "queen of flowers," blooming in great profusion, and ranging from Los Angeles, Columbia, Sunset, Lady Hillingdon, and Mme. Edouard Herriot, to the lovely pink, white, and red Killarneys as well as many others well known to rose-lovers.

The plans for the tea contemplate an exhibit of roses arranged

in the sun-room. For this, many members of the community have promised their choicest treasures. Tea, ices, and cakes are to be served in the rose-embowered pergola. Pretty "hawkers" will vend their wares of candied rose-leaves, fragrant petals for the rose-jar or dream pillow, single flowers for the Japanese vases, and great baskets filled with long-stemmed blooms. It will be a hardened person who will not succumb to these many temptations! There will be solo dancing under canopies of Crimson Rambler, and, to finally satisfy, Kansas City's best musicians will tell in song of more roses.

The date of the event depends entirely on the bloom-whim of our fragrant friends. They are wilful and temperamental, and change their minds with the wind and rain; we will await their convenience.

THE COLUMBUS ROSE EXHIBITION

This is the title of the admirable premium list of the Fourth Annual Rose Show held in Ohio's capital city, under the auspices of the Columbus Horticultural Society. It occurred May 28 and 29, 1921, and this list was printed in advance, with a space for inserting the date by rubber stamp when the critical time arrived. The list of prizes, the explanation, the suggestions "for those who will exhibit roses" are all admirable. There is a blank page headed "Varieties of Roses that I Prefer," to induce the making of notes.

Perhaps Mr. D. A. Thomas, the secretary of the Columbus Horticultural Society, would respond to requests for copies of this model premium list.

The Richmond Children's Rose Fair

By EULA YOUNG MORRISON
Secretary and Treasurer, Richmond, Va.

EDITOR'S NOTE.—Rumors reaching the Editor that something new in rose popularization had taken place in Virginia's famous capital, caused such inquiry as to bring Mrs. Young's pleasant story of a notable event. Mr. Ratcliffe's generosity and the fine reaction to it of the ladies who conducted this unique Rose Fair have made possible the starting of something altogether worth while. (See Plate VIII, facing page 64.)

ON MAY 21, 1921, the Houdon group of statuary in front of the "Governor's House" in Richmond, Va., was the center of interest in the first event of the Children's Rose Fair, the beginning of what is believed to be one of the greatest civic movements ever started in Richmond.

Fastened to the spiked iron fence, which guards the Houdon group from vandal hands, on this May day were great Japanese umbrellas, forming bright patches of gay color against the somber gray of the base of the monument, and in front of the umbrellas was a long line of improvised tables piled high with thrifty plants of Red and Pink Radiance roses, most of them in bloom. Behind the tables were a hundred of Richmond's good women under the chairmanship of Mrs. John Skelton Williams, who put beauty and brains and much executive ability into making the Children's Rose Fair a success.

Among these women were the little "first lady" of Virginia, and the wife of Richmond's Mayor, who was also, together with numerous state and city officials, among the hundreds of interested spectators.

John L. Ratcliffe, a Richmond florist, gave the roses to Richmond school children—3,000 of them—because of his love for both children and flowers. Mr. Ratcliffe has two aims in view in whatever he does for the children of Richmond. First, to make Richmond a more beautiful city, and, second, to make healthier, happier, and better citizens of the children of his native city. City orphanages and the Crippled Children's Hospital were the first to have roses sent to them in the Children's Rose Fair. The official car of the Governor carried the roses to the Crippled Children's Hospital.

Capitol Square was thronged with children very early in the day on May 21, 1921, holding tightly to the cards which entitled them to the roses. No child received a rose who did not present one of the 3,000 cards, mailed to the first 3,000 school children (Richmond has more than 38,000 children in her public schools), who had made written application to the Secretary for one of Mr. Ratcliffe's roses.

The roses were all Pink and Red Radiance, for the reason that this variety seems to thrive best in this section of Virginia, and Mr. Ratcliffe wanted each child to have equal opportunity, so far as plants were concerned, to compete for the prizes.

The prizes were unusual. They were all savings accounts in the Federal Trust Company, thus encouraging thrift and saving habits in the children, along with the love of flowers and the joy of working in the open. The prizes totaled $105. One-half the prize money, as well as all expense incidental to the Rose Fair, was paid by the Federal Trust Company. At the very beginning of the Children's Rose Fair, the Richmond chapter of the United Daughters of the Confederacy offered a prize of $5 in gold for the most beautiful bouquet of roses, containing at least one of the Ratcliffe Radiance, grown by the child himself. This special prize, by the way, was awarded at the annual state convention of the United Daughters of the Confederacy at the Hotel Jefferson, in October, where hundreds of Daughters from all over Virginia were in attendance.

Thus ended the first event of the Children's Rose Fair.

The second event was closely correlated with the Virginia State Fair, held in Richmond during the first week in October. More than 1,000 children had already reported the varying results of their amateur efforts at rose-growing to Mr. Ratcliffe before the State Fair opened. Taking into account the fact that there is a general exodus of people from Richmond during the hot weather, and that, in many instances, the children planted their roses in poor soil and an equally poor exposure, and, considering the astounding ignorance of the majority of children regarding the simplest fundamentals of plant-culture, Mr. Ratcliffe regards it as simply amazing that so many children gave their plants good care and carefully tended them through the hottest and driest summer we have ever known in Richmond.

PLATE VIII. The Women's Committee preparing to distribute roses to children for the Richmond (Virginia) Children's Rose Fair. (See page 63.)

The Children's Rose Fair was widely advertised as an event of the State Fair, and the judging of the roses took place on Thursday. The Rose Fair was held in conjunction with Mr. Ratcliffe's commercial exhibit, in the center of a corner section of ground laid out as a formal garden. Here was ingeniously maintained a continuous moving-picture show showing the May event of the Children's Rose Fair, with additional pictures of the children who had fine roses. This was made possible through the use of a deep shadow-box of wallboard. As the children brought in their plants, they were carefully labeled and listed and added to the exhibit in the building. The booth from which literature was distributed was a reproduction of the front of the Federal Trust Company, in order to familiarize the children with the appearance of the bank where they had their savings accounts, should they win prizes.

The roses exhibited by the children were truly wonderful. Some of them had from ten to twelve splendid canes from plants propagated in March. The judges were frankly amazed, and Mr. Ratcliffe was delighted at such a splendid showing. It was thus definitely proved that Richmond can easily be made a city of roses.

The second event closed with camera-men and newspaper reporters again much in evidence, and the complete Rose Fair film was run at two local theaters for two weeks following the close of the State Fair. Local newspapers carried pictures of prize-winners and their roses, and thus the Children's Rose Fair became not only the realization of a dream, but an integral part of Richmond's civic development.

One of the pleasantest memories of the Children's Rose Fair was the short visit of the secretary of the American Rose Society, John C. Wister, who lectured at the Woman's Club. We hope he can come again to Richmond next spring, when Mr. Ratcliffe expects to set in motion the machinery for another and greater Children's Rose Fair. Mrs. Williams is especially anxious that those born lovers of flowers and music, our colored people, shall not be debarred from competition in the Children's Rose Fairs of the future, and Mr. Ratcliffe hopes to make this, among other things, possible. We want to have Richmond emulate Oregon's famed rose city!

How to Start a Rose Show Anywhere

By CHARLES G. ADAMS
Secretary Auburn Rose Society, Auburn, N. Y.

EDITOR'S NOTE.—It is believed that in no way can the rose so readily get to be universal in America as through that creditable envy which we call emulation, which results from seeing that your friend or neighbor has produced some beautiful roses which are not peculiar to him. Rose shows ought to mean rose prosperity and rose betterment in any community.

Too many who first note this heading will be thinking of the great national and international flower shows, occupying acres of space, requiring months of preparation on the part of the exhibitors, costing large sums of money, and giving important and expensive awards. These shows have their own important place, but the show in mind in Mr. Adams' paper is that which is easy for a city of 10,000 or more people, and just as easy in any community of 100 or more people, the difference being only in the size of the show.

It is the Editor's feeling that he may, without irreverence, paraphrase Scripture and say that "Where two or three rose-growers are gathered together there ought to be a June show in the midst of them." Using the simple form of organization proposed by Mr. Adams, modifying it according to circumstances and possibilities, keeping in mind all the time that the main thing is to have a show of roses so clean and simple in character that the man or woman who has one fine bloom on the morning of the show can exhibit it with credit, there ought to be no difficulty about having many hundreds of June shows in the United States and Canada during 1922.

ONE day Mr. David M. Dunning, an Auburn banker who has become a great rose expert, brought to my office, while I was secretary of the Chamber of Commerce, a beautiful bouquet of Hybrid Tea roses, choice in shade and variety. I remarked, "You brought these from your greenhouse." "Oh, no," was the reply, "I didn't; I grew them outdoors in my rose-garden, just as you or anyone else can do if you want to."

As it was my business to grasp at everything good and new for Auburn, I pursued the subject with Mr. Dunning, and we promptly decided to form a rose society, which through conducting a good rose show would probably give opportunity to many to see these beautiful roses.

So we organized a rose society instanter. How did we do it? By just getting together a dozen or more people who love roses, and then electing a president, vice-president, secretary, and treasurer. The deed was done!

We then proceeded to arrange for a rose show. We felt that with Mr. Dunning's great garden to draw upon, having fully

two hundred varieties, our show would be an assured success; but we found to our gratification and surprise that many other people were growing beautiful roses of the very choicest varieties in a small way, and had never before had an opportunity to give the public a chance to see them. The rose show afforded this opportunity, and the growers were very glad to bring their best roses from seclusion into view.

Being not far from Cornell University, whose Professor of Floriculture, E. A. White, was then also secretary of the American Rose Society, we were able promptly to secure invaluable aid, not, however, different from that available to any member of the American Rose Society anywhere.

In this year, 1921, we have just finished our fourth successful annual rose show, each year with increased interest, and as a result more than double as many people are now growing roses and becoming more and more interested in them.

North of Auburn is the small village of Port Byron. Members of our Society were glad to help this community in a fine show this year. The rosarians of Skaneateles, a town east of us having about five thousand inhabitants, were invited to join our Society, with the promise that we would coöperate with them in organizing a rose show in their beautiful community. This promise was kept, and the result was one of the most beautiful and pleasing events ever held there or anywhere.

Perhaps because our efforts started right within the Chamber of Commerce unusual interest has followed. Just think of it; an address on rose-culture has been given before a Chamber of Commerce! The Rotary Club and the Finger Lakes Association have helped to promote the cause, and it has all resulted in a movement to plant roses along the state roads and in dooryards where all may enjoy them.

Now all this rose conflagration started with that little bouquet of roses placed by Mr. Dunning on the desk of the secretary of the Chamber of Commerce one summer morning! The enthusiasm now is more intense than ever, and we have no doubt that the work will continue almost of its own momentum. What has been done in this locality can be accomplished anywhere if only a few rosarians will get together and organize as a rose society preliminary to putting through a simple rose show.

You ask about the expense? Dues of $1 a member will cover all the local expense, but a new society will do well to arrange for affiliation with the American Rose Society according to its liberal terms, by which if ten or more members are concerned, the net cost of membership in the National organization is reduced by 50 cents. The ideal situation is to get 100 members, to charge each $3, and to have $1 refunded for the local relationship, each member becoming affiliated with the American Rose Society and receiving the Rose Annual, which will insure continued and helpful interest.

The show can be held in a vacant store or in a public hall. Sometimes a well-lighted church room or a hotel lobby can be found. The space ought not to cost anything, as a rose show of this sort is a civic event sure to help the community.

It is the best to plan for a one-day show, the roses to be presented in order by 9 o'clock in the morning, the judges to go about before 10 o'clock, and the public to have all the rest of the day to enjoy itself, including evening if light is available. In some cases the same organization can hold two shows, one for the later climbing roses, which are not in full bloom when the major part of the Hybrid Teas are available.

Church tables or tables from somewhere used for public purposes can be borrowed for the display. Milk bottles are good containers. With a little care and the getting of some greens, a tasteful and altogether delightful show can be managed.

The awards ought to be of honor rather than of value. Ribbons are desirable awards: a blue ribbon for first prize, a red ribbon for second prize, and a white ribbon for third prize. The medals of the American Rose Society, silver and bronze in nature, can be obtained through affiliation and through correspondence with the secretary of that organization. An excellent prize is membership in the American Rose Society, carrying with it the American Rose Annual. A good rose book, such as Captain Thomas' "The Practical Book of Outdoor Rose-Growing," is a prize that many will strive for.

Generally speaking, the beginning of a rose show will be altogether among amateurs, and unless this is so it is obviously fair not to have prizes competed for on the same terms by both amateur and professional rose-grower.

It is educationally important that one of the requirements of a show be the correct naming of roses. Usually where there is enough rose enthusiasm for a show there is enough rose knowledge to see that the flowers are properly named.

Anyone who will write the Secretary of the American Rose Society can secure the standard rules and regulations for shows as adopted September 17, 1919, including a scale of points for judging; but, after all, common-sense separation into the various classes will provide opportunity for many persons to get prizes, and that is the very essence of a successful rose show.

For example, the Hybrid Teas can be divided into the best general exhibit, the best three varieties named, the best six varieties named, and so on; or there may be another section dividing by color, as of the best white Hybrid Teas, or pink Hybrid Teas, or red Hybrid Teas, or yellow and salmon Hybrid Teas. There can also be classes for baskets or displays of cut roses, and, where there is a rather general agreement as to one rose of particular prominence, like Frau Karl Druschki or Radiance, a prize can be offered for the best specimen.

But this is not the place to give the details. Get the enthusiasm and the details can also be had!

Simplicity is a mighty desirable feature of a pleasant amateur rose show. It is just a friendly competition for "honors" that mean nothing more than the gratification of having cleared the way for nature to show her smiling face in the heart of a rose. The conditions and regulations and rules ought not to be stiff and formal; make it easy for a man or a woman, a boy or a girl, who has one glorious flower opening to the sun that June day to show it for the pleasure of all and for the glory of God!

In order to meet the constant disposition of us Americans to always organize and elect officers, I have proposed a simple form of constitution and by-laws, which I have filed with the secretary of the American Rose Society, who will be glad to supply a copy of it on request. Frankly, if the rose-lover has not enthusiasm enough to write to Mr. Wister for the necessary information, he does not have enthusiasm enough to conduct a show to success, so that I am sure he will get what is coming to him in any case. No one, however, need hide behind a plea of difficulty or expense.

Staging a Rose Show

By THE EDITOR

A ROSE show is surely intended to be attractive, beautiful; a condensed, even if temporary, rose-garden under a roof.

If this is so, then why, all too frequently, is the arrangement such as to effectively remove, so far as thoughtless conventionality can manage it, all natural color and light relations from the roses and other flowers displayed?

The Tea and Hybrid Tea roses grow on plants or bushes that are seldom in themselves symmetrical or beautiful, apart from the lovely flowers they bear. It is largely for this reason that they are segregated in the garden, having no place in the hardy border with other woody shrubs that are pleasant to look at when out of bloom because of foliage or form or fruit.

Yet natural conditions in the garden tend to center light from above on the flowers of the roses. They are borne—if the plants are healthy—among or over abundant green foliage of just the shade that will best contrast with their hues. Save where the soil is white sand, the ground is light-absorbing, in its various hues from deep gray or dull black to the reds, the browns, and even the tempered yellows of certain sands. Never is the ground the major light-reflecting surface, even when it is nearly white sand, for this same sand is not smooth and glossy.

Nature sets the stage so that the queen of flowers takes the center, so far as light is concerned.

But how do we usually show roses at our all too infrequent summer exhibitions? We "hire a hall," frequently with scanty or ill-placed day lighting, and with the color-distorting night illumination of gaslight or the electric carbon filament. (The tungsten or Mazda lights are not so bad.) Then we buy or borrow some bare wooden tables, of the smoothly painful color of planed lumber.

As these tables look too "raw," and as neatness *a la* the kitchen cabinet shelves requires covering, we lay upon these tables white or light "manila" paper, all nicely turned over the edges.

Then come the vases, which vary in atrocity with the money at our disposal, usually on the basis of the more money to spend, the worse the obtrusiveness of the vases.

When the choice blooms come in, they are "staged" in nice regular order in these more or less awful vases, spaced out liberally on the altogether awful white paper—and we have done all we know how to reduce the beauty and the brilliance of the roses.

No, there is yet another indignity it is possible to put upon the queen of flowers, and it promptly follows, in two divisions. The first division is the attachment of white entry cards,—the larger the worse!—bearing the necessary information. After the judges have done their work, the second insult to outraged nature is imposed with the award ribbons or cards—again the larger, the bluer, the redder, the yellower, the worse! Not infrequently this insult is intensified by the color or character of the attaching ribbons or cards.

Aside from the jarring of colors, the main damage to the beauty of the roses is done by the white or light table surface on which they are displayed. This surface tends to entirely reverse Nature's plan for illuminating things that grow in the ground, for the light abundantly reflected from the smooth white or light paper or boards frequently exceeds or equals that falling from above on the flowers and foliage. The effect is to dull the brilliance of the deeper colors and to materially reduce or altogether obscure the delicate petal shadings that give life and loveliness to the roses of the lighter and daintier hues.

Anyone can convince himself that I am right—or wrong?—if he has a color-sensitive eye, by three minutes of experimentation with one or more rosebuds or blooms. Put them in a glass milk-bottle or some similarly plain holder and view them on a table covered in turn with various substances and with white, all lighted from above. It will promptly be noted that Nature knew best in having the rose surrounded by cool, light-absorbing green leaves, borne on a plant growing in light-absorbing ground, usually of a dull or neutral shade of a dark color.

Once this plain fact of nature and optics is appreciated, there need be no trouble in arranging to stage roses and other flowers so as vastly to enhance their attractiveness when exhibited.

It is hardly in point to list the substances that may be used to cover the wooden tables, for they are legion. Nothing should be used that is glossy or light-reflecting, either in texture or in

color. Ordinary burlap, such as is used to protect furniture when shipped, is excellent for the purpose, with the merits of cheapness, indifference to water spilled upon it, and ease of placing. It can be used repeatedly; it is not a total loss, like any paper, for each show.

There are dull colors and dull finishes in paper that provide an excellent simulation of the natural ground, but they are not cheap or durable. Suitable papers are among the "cover" papers carried in warehouses that supply printers.

I must caution anyone who reads against certain hideous green hues available in paper. Prescribing according to what is above written for friends who asked, I have commended "olive," or "dull green" as suitable colors available in paper. The prescription was filled, in one case, by paper of a light olive or near olive, altogether sickening in hue, and worse than raw white. Another time "green" paper was used, of a snaky, arsenical hue, quite able to destroy the color beauty of the flowers.

If the tables are painted in a neutral dark gray or olive or dull brown, no paper need be used. The essentials are that the surface shall not strongly reflect light, and that its hue be neutral.

The vases ought to be inconspicuous. Glass is probably best, but glass can be distorted into some abominable shapes, as was done during the cut-glass craze now happily out of fashion, as it always was out of good taste. The shape of the container of water in which the flowers are to be displayed needs to be so simple that it does not obtrude itself. It is the flowers that are to be shown not the vase or the table or the labels or awards.

The desirable labels or entry cards can be managed in several ways so as to be efficient without being obtrusive. Gray or brown cards, such as are used for photographic mounts, with the essential printing in black ink and the essential writing in the white ink easily purchasable at any art store, will give great satisfaction.

These labels or cards can be attached by dull—not bright—green or brown twine or raffia, or better can be lightly tacked on the table. They ought to be visible but not obtrusive, like the necktie of a gentleman.

With the same idea in mind, the awards can be so arranged and disposed as not to destroy the harmony of the display. The use of good foliage will help in this.

PLATE IX. A Field of Frau Karl Druschki Roses at Glen Saint Mary Nurseries, Florida.
One-year-old budded grafted in January, 1921, on Manetti stock. Photograph made in January, 1922. (See page 362.)

Several years ago I saw a chrysanthemum show in the Phipps Conservatory of Schenley Park, in Pittsburgh, which was especially beautiful and effective, as was proved by the great throngs of people who visited it. There were no stiff rows of vases, no plant monstrosities out in the open. The lovely 'mums, whether cut and in vases, or as potted plants, were arranged among and against foliage of palms, ferns, etc., so that each flower had what God intended it to have—a setting of green. The colors were arranged so as not to hurt each other, also.

At the great National Flower Show held in Philadelphia several years ago, one rose-garden was attractive above all others, to judge by the way the people crowded to see it. It was just a real rose-garden, the plants in bloom being arranged in beds of soil as they would be outdoors. This Dreer display was a winner, because it was natural.

The great National shows tend now to much elaboration, and also to better taste. They do not greatly stimulate amateur effort, I fear. It is the many small one-day shows, held when the great burst of rose bloom comes in June, that will do all of us most good. If these shows are well handled, they will help materially in making the rose universal in America. Large expenditure is not necessary, and it will be noted that I have above proposed nothing costly in money, though I admit that the sort of rose show I desire to promote will cost thought and care, which are sometimes harder to obtain than mere money. Good taste in arranging a show is its own reward, however.

Elsewhere in this Annual will be found the story of a show held in Kansas City in which the judging of the floral exhibits was done by the whole body of freely admitted visitors. The visitor, instead of giving up a ticket at the door, there received one on entering, the ticket being a list of the prize classifications, upon which he was desired to vote as he went about. This sounds like a very good plan, tending not only toward a truly popular verdict on the exhibit, but to much unconscious education of the many judges. I want to visit such a show.

Rose friends of America, grow your roses to your best approximation of perfection; show your roses freely in a wide-open amateur exhibition, arranged with good taste. You will be doing good work for God and man!

Rose-Lore Clearing-Houses?

By JAMES H. McNEILL, Albany, Ga.

EDITOR'S NOTE.—Constantly the members of the Committee of Consulting and Advising Rosarians receive inquiries as to suitable rose varieties, which, if they be from other climates or soil conditions than those known to the committeeman must be answered uncertainly. It is true indeed that the rose is the universal plant, but by no means true that all rose varieties are of universal adaptability.

Mr. McNeill's suggestion, if it resulted in the establishment of available centers of rose information, the "clearing-houses" to which he refers, makes possible the avoidance of disappointment and loss on the one hand, and the establishment of delightful rose relationships on the other hand. A successful rose-grower is usually both good-natured and willing to tell of his methods.

The American Rose Society has already provided the beginnings for such clearing-houses, for it publishes each September in the annual "Members' Handbook" an accurate list of members by geographical location. Thus Mr. McNeill duly received—after he had written, however—the names of rose friends all about him, though they are all too few, the Editor admits.

But the way is indicated to get this needed interchange of local rose-lore. Get ten or more members, form a local rose society, and talk things over together. Rose shows will follow, and the American Rose Society stands ready to provide its silver and bronze medals for awards at such annual shows. Further, as may be noted on the inside cover page of this Annual, decided financial advantages are available to such organizations.

TAKING advantage of the invitation of the 1921 Rose Annual, to "tell it to the Editor," I am submitting a suggestion which, if possible of adoption, will save many amateur rose-growers much disappointment.

This suggestion is born of my own experience in growing good roses in south Georgia, my previous experience having been entirely in my native state of North Carolina. Naturally, when I came to Albany I followed the same general plan, but the result was disappointing. I then turned to the several commercial catalogues, and "attacking the problem with all the confidence of ignorance" made a selection of the "superb, glorious, strong-growing, free-blooming," and the like, roses offered. Again failure was complete and dismal. In the light of subsequent experience, the result would remind one of the alleged statement of Vice-President Coolidge, to the effect that he had not bought a pair of shoes since 1914, and the reply of a Chicago editor, "Neither have we; but we've bought a lot of things that were called shoes."

But I was convinced that good roses could be grown in this climate, and, fortunately, concluded that it was largely a matter of finding out which sorts were best adapted to it. After three years, the result is most gratifying. I am enjoying a pleasure which will increase with the years, and which is a recreation as well—for rose-growing *is* a recreation.

There are unquestionably other amateurs similarly located, and where the same general conditions of soil obtain. Many of these have—and others will yet—"butt their heads" just as I did mine, wasting a lot of money, and at the same time be denied the delight of a real rose-garden for several years while they are buying their experience.

Now if there was a means of getting *local* experience and knowledge of conditions into the hands of each of us when we are starting our gardens, it would, it seems to me, be most valuable. It is true that the selection of roses is largely a matter of personal taste, and those that we think the most beautiful in color, shape, or type might not appeal to another at all. Nevertheless, authentic information as to the growing habits of the different varieties would be of much value.

For lack of a better name, let us call this suggestion a "clearing-house" of rose-growing information. My neighbor, living twenty miles away, for example, may have grown roses successfully for years. He has already learned those kinds best adapted to our common climate, their shortcomings, and how to overcome them. Now he would be glad to give me the benefit of his experience, and I would certainly be able to profit by it if there were just some means of finding out who this neighbor is. If he had recorded his knowledge in some central distributing medium, and his records could be made available to those living and working in the same conditions, it would be a long step toward the ideal of an *actual* "rose for every garden;" and there are hundreds of "neighbors" scattered over this great country who would be glad to share their rose joys and sorrows with others.

These records need not of necessity be prepared for publication. They might be handled on a sort of circulating library plan. In this manner, application for information from an amateur in a certain section of the country would bring him

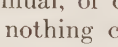
records, or at least other information even in the shape of letters, from other growers in the same general section. It might place him in touch with other rose-lovers within a radius of a few miles, whom he might not otherwise meet in a lifetime.

The best argument for some such plan as this is scattered through the pages of the Annual itself. I quote from the article of Dr. Mills: "Over vast areas rose-lovers are so far apart that they work at a great disadvantage. . . . But as these rose pioneers get in touch with one another . . . their information and experiences are syndicated."

In the Editor's inquiry, "How to make roses grow," the first requisite named in Mr. Thomas' reply is, "The grower must secure proper varieties for his climate and conditions—the kinds which are grown successfully in the same neighborhood."

If these two high authorities regard local information as thus important, we may safely concede the point as established. My suggestion is merely an effort to supply it in a practical way, and I should appreciate your criticism of it.

The American Rose Annual, of course, goes a long way in supplying this need and nothing could supplant it. But it, alas, is an Annual. If it could only be a monthly, my suggestion would never have been made.



A Russian Treatment for Mildew.—Our Oregon associate, Jesse A. Currey, in writing of a visit from Prof. Arthur de Yaczenski, for many years a plant pathologist in Russia, and now in the United States, adds this statement of possible importance: "Professor Yaczenski told me that they had found the best treatment for mildew to be a spray of bicarbonate of soda, dissolved in water in the proportion of one ounce of soda to one gallon . . . . I have used a weak solution of this same baking soda for cleaning mildew from exhibition specimens on the advice of Dr. S. S. Sulliger. I know that it removes the mildew, but have never experimented with it in the open."

Here is a mighty interesting possibility for some 1922 mildew bothers. Let the Editor hear about what happens, rose friends.

Roses in New Mexico.—From the news letter of the United States Department of Agriculture it is learned that in one of the dry farming counties in New Mexico the surroundings of ranch homes have been improved and beautified through the planting of rose bushes. The varieties used were Red Radiance, Lady Battersea, Maman Cochet, Sunburst, and Old-Gold. In well-fertilized soil the roses were protected from the spring winds until growth was established. In the fall a bottomless nail-keg was placed over each and filled in with earth and manure. Thus the beauty of the rose was made possible to a climate usually considered out of the question.

Black-Spot and Mildew of Roses

By L. M. MASSEY, Plant Pathologist, Cornell University

EDITOR'S NOTE.—More inquiries have been received by the Editor as to the treatment of black-spot and mildew than as to any other rose subject. These mean diseases, which quickly defoliate and devitalize our Hybrid Tea pets, ought to be controllable, and Dr. Massey, who has undoubtedly given them more study than any other American pathologist, insists that they are.

On page 63 of the 1918 Annual, Dr. Massey first presented the results of his careful experiments for the control of black-spot and mildew. Following, he brings both experience and treatment up to date.

It must be insisted that black-spot cannot be cured, in the sense that the affected leaves will become green and useful after any possible treatment. The only way to cure black-spot is not to have it to cure. It must be prevented, or controlled, as the pathologist puts it. The Editor therefore hopes that those whose roses have been afflicted with this disease will not wait until it again makes its appearance in 1922, but will dust or spray diligently and persistently to keep it from appearing at all. "Prevention is the price of roses," might be the slogan. Further, and emphasizing the importance of the disease, Dr. Massey writes, "Black-spot control should be looked upon as a major operation in rose culture."

Following Dr. Massey's clear exposition of the trouble and its prevention are presented the statements of two careful amateurs who have succeeded, in their own way, in preventing black-spot. Members of the American Rose Society have thus available not only the last scientific word on this subject, but the experiences of ordinary careful rose-growers.

The discussion of mildew is put first at the request of the author.

Powdery Mildew

THE two diseases above named are the chief interferences with successful rose-culture in the United States. They interfere with the prosperity of the commercial grower and discourage the amateur. They can be controlled by proper sanitation and applications, and the methods of control follow.

Powdery mildew is one of the most common and injurious diseases of the rose, especially of plants grown under glass. Outdoor plants are commonly attacked, the Crimson Rambler and related forms being especially susceptible. Varieties differ greatly in susceptibility. Ramblers and other climbers which are generally held to be very susceptible to mildew will be found to suffer less severely from the disease when grown away from walls so that they have free air-exposure. This is explained on the basis of moisture relations, the air drying the plants quickly. Fungous spores, like seeds of higher plants, require moisture to

germinate, and it is characteristic of most fungi that they flourish under moist conditions.

Symptoms.—The first signs of the disease are grayish or whitish spots on the young leaves and shoots. Frequently, the unopened buds are white with mildew before the leaves are affected to any great extent. These spots quickly enlarge, a felt-like coating of a white, powdery appearance being commonly found on the stems and thorns. Later the mildew appearance is less conspicuous or entirely lost, the affected areas turning black.

Dwarfing, curling, and various deformations of young leaves, stems, and buds occur. Injured leaves may fall, and the leaf surface of the plant be thus greatly reduced. Growth and flower production are materially interfered with, young buds being frequently attacked and rendered entirely worthless.

Cause.—Powdery mildew is caused by a fungus.* Under the microscope the white patches on the rose plant are seen to consist of a mold-like growth (mycelium) composed of slender white threads with numerous branches which form a network over the surface of the leaf. At various points, upright branches are developed which bear chains of egg-shaped spores. These spores are easily detached and lie in masses, giving the older spots a powdery appearance.

When mature, these summer spores are blown about by the slightest currents of air. They are thus carried to other leaves, where, under proper conditions of temperature and moisture, they germinate. The germ tube which comes from the spore grows rapidly, branches, and in a few days has produced another spot of mildew with a new crop of spores.

It is important to note that the greater portion of the vegetative structure, called mycelium, is on the *outside* of the leaf. In the case of black-spot the mycelium is *within* the leaf. At various points the mycelial threads of the mildew fungus are attached to the surface of the plant by minute branches or suckers which are sent into the outer cells of the leaf or stem from which the fungus obtains its nourishment.

The summer spores are short-lived. However, another spore-

*Powdery mildew of roses is caused by the fungus *Sphærotheca pannosa* (Wallr.) Lév. var. *rosæ* Wor.

form develops to carry the fungus over long periods unfavorable to the growth of the mildew. Somewhat rarely, and chiefly outdoors, the winter spores are produced in little sacs within minute dark fruiting bodies embedded in the felt-like mycelium on stems and thorns. These spores can live over winter outdoors, and may serve to start trouble the following spring.

The fact that the winter spores have not been observed to be commonly formed, while mildew is ubiquitous in its occurrence, has influenced some to the belief that the mycelium is perennial. Some writers have stated that the mycelium may live over winter in the buds of the rose; others that the mildew appears in successive years on the same shoots of infected plants. In countries of warm climates, the fungus is doubtless carried throughout the year in the vegetative stage, as is true of roses grown under glass where the temperature does not fall sufficiently low to kill mycelium and spores.

There are, then, two, and possibly three, sources of primary infection in the spring. First and of primary importance is the production of the winter spores on plants grown outdoors. These spores are disseminated by the wind, rain, man, and other agents, and, under proper conditions of temperature, moisture, and position, germinate and produce infection. The second source of inoculum for roses in the open is the distribution of the summer spores formed throughout the year on roses under glass. These spores are very light and might readily be carried by the wind for great distances. Growers frequently buy pot-grown roses in the spring to plant in their gardens. Some of these plants may be affected and often the fungus spreads quickly to other bushes. The third possible source of inoculum is the production of spores by mycelium which has wintered over on plants in the open. Doubt exists, as stated above, as to whether the mycelium is perennial in sections having relatively cold winters.

Control: (a) *Outdoor roses.*—The efficiency of sulphur fungicides for the control of powdery mildew of the rose has long been recognized. Lime-sulphur, potassium sulphide (liver of potassium), probably dilute sulphuric acid, and other liquid sprays are more or less effective, but owing to the time and labor involved in applying spray solutions and to the unsightliness brought about by their use, an efficient dust mixture is preferable.

The finely ground dust mixture consisting of 90 parts sulphur and 10 parts arsenate of lead (see under black-spot, page 83) will give positive control of mildew. This material is easy to handle in the dust form, and does not greatly

discolor the foliage if used properly. Ordinary flowers-of-sulphur, which may be obtained from drug stores, is less efficient because of its coarseness.

Lime-sulphur solution used at the strength of 1 part of the concentrated solution (see page 85) to 50 parts of water will give satisfactory control, but is less efficient, more difficult to apply, and discolors the foliage.

Potassium-sulphide may be used at the strength of 1 ounce to 3 gallons of water. It is less efficient than the dust mixture, and more expensive.

Fungicides containing copper as the active ingredient are probably less efficient than those containing sulphur. However, fairly satisfactory control may be had from the use of 5–5–50 bordeaux mixture or ammoniacal copper carbonate (see page 83). The writer has not had the opportunity to test solutions of potassium permanganate, sulphuric acid, and various proprietary compounds and so is unable to comment on their efficiency.

If an effective fungicide is used it is possible to control mildew by making not over three applications. Since the fungus lives on the outside of the leaf, *it is possible to eradicate it after the disease appears*—a point in which the control of mildew differs radically from that of black-spot. Immediately upon the first appearances of mildew the plants should be given an application of fungicide, it being advisable to treat all plants in the garden, especially those of climbing habit of growth. Another treatment should be made about a week later, and if necessary a third application about a week following the second treatment. It will, of course, be necessary to be on the lookout for subsequent infections, and to be prepared to make treatments when needed.

(*b*) *Under glass.*—Florists commonly paint the heating pipes with mixtures of sulphur and lime for the control of mildew, the sulphur being thus evaporated and condensed on the plants where the fungus is killed. The use of evaporated sulphur has been recommended, a small kerosene stove with a thin iron kettle being used and the sulphur kept boiling two or three hours a week in a closed house. Both methods have given good results, the use of a kerosene stove or other means of heating the sulphur being necessary at times when the houses are not artificially heated. Care must be taken to see that the sulphur does not catch fire, for the fumes from burning sulphur will injure the plants. The use of the sulphur-lead dust on roses under glass will undoubtedly control the disease and may in many cases be a more desirable method than that of using evaporated sulphur.

[See, also, suggestion on page 76 to use sodium bicarbonate.—Editor.]

Black-Spot

The disease known as black-spot is probably the most common and destructive disease of the rose. It occurs wherever roses are grown, is frequently epidemic in its severity, and is always a factor demanding consideration by both the commercial grower and the fancier. Along with the losses resulting from premature defoliation and the decrease in the number of blossoms must be considered the unsightliness of diseased foliage. Furthermore, the rosarian has too frequently found the recommendations for control to have been made without due regard being given to his needs. Sprays

which will discolor foliage and buildings may be more objectionable than the disease itself, with the result that growers have been loath to use many of them, even though their efficiency in suppressing the disease has been established.

The fact remains that *black-spot is controllable*, and by measures not so complicated nor objectionable but that the average rosarian may and will apply them. A word or two on symptoms is given in order that all may know or learn to recognize the disease being considered. The brief account of the life history of the parasite is most important, and should be kept in mind by all who are trying to combat the disease. The recommendations for control must be closely followed, for one must realize that the delay of a few hours in the application of a fungicide may mean the difference between success and failure.

Black-spot control should be looked upon as a major operation in rose-culture, for the problem is worthy of one's best efforts, and the results to be obtained provide ample reward.

Symptoms.—Black-spot may be recognized by the black spots on leaves and petioles*, by the leaves yellowing, and by premature defoliation. The variety concerned will tell which of the above symptoms is to predominate. The more or less circular spots may reach a diameter of a half-inch or more, are black in color, and have irregularly fringed margins. They appear in late spring or early summer, and only on the upper surface of the leaves. During late summer and the autumn, when cool nights and heavy dews prevail, the disease increases rapidly and frequently becomes epidemic in severity. It is during the autumn that the disease usually starts on plants under glass, and, if a foothold is gained, continues to give trouble throughout the winter. The importance of temperature and moisture in the development of the disease is thus emphasized.

Cause.—Black-spot of roses is caused by a fungus.† This parasitic plant is microscopic and attacks roses only. It lives over the winter in dead leaves, either on the ground or clinging to the plant.‡ During the winter and early spring one of the two

*The disease is held to occur in Europe on all parts of plants above ground.

†*Diplocarpon rosæ* Wolf, long known under the name of *Actinonema rosæ* (Lib.) Fries.

‡It is held that in England the fungus passes the winter as mycelium in spots on the stems, and that the winter-spore stage, which develops commonly in this country, is not formed.

spore-forms of the fungus is developed. These winter spores, which serve to reproduce the fungus and which correspond to seeds of our higher plants, are produced in minute sacs which in turn are protected by being borne within or under a definite, protecting fungous structure. In the spring or early summer, when the rose plant is putting out its leaves, the spores of the parasite are matured. They ooze out of the structures within which they are produced and are carried to the leaves. The agents involved in transferring the spores and thus inoculating the plants are wind and splashing rain.

When suitable conditions of temperature and moisture prevail, the spores on the leaves germinate by the production of minute germ-tubes which penetrate the cuticle, or outer covering of the leaf. Beneath the cuticle, where it is beyond harm from outside influences (including fungicides), the germ-tube develops into a thread-like structure, called mycelium, which is the vegetative structure of the parasite.

The mycelium within the leaf continues to live throughout the summer and winter. Within about fifteen days after the first infections of the season have taken place, there arise from the mycelium many thousands of secondary or summer spores. These spores are disseminated by the wind, and are doubtless carried long distances. On the surface of rose leaves to which they may be carried, they germinate, under moist conditions, within a few hours. Each spore may produce another spot, and fifteen days later another crop of summer spores is matured and ready for dissemination. When one considers the millions of spores that are produced from a very few spots on the leaves, each spore with the potentiality of producing another spot, it is not difficult to understand the rapid spread of the disease, nor is it difficult to realize the necessity for prompt action in order to control the malady.

When the diseased leaves fall from the plant, prematurely or normally, the fungus does not die, but continues to live throughout the winter in the dead and decaying tissues. With the arrival of warm weather, which pushes the leaf-buds into renewed activity, the winter spores, which are to initiate the disease for another season, are mature. Thus the life-cycle of the fungus is complete.

Control: Sanitation.—From the preceding outline of the life history of the fungus it would seem as if the matter of control ought to be easily solved. All one would need to do is to rake and burn the old leaves on the ground and thus eliminate the source of infection. But, unfortunately, the problem is not so easily solved. One can never succeed in the destruction of all of the old leaves, and but few leaves or parts of leaves bearing the fungus are needed to produce the comparatively few spores which are sufficient to initiate the first few spots of the season. The production of each new spot means the maturing of thousands of summer spores some two weeks later, which will rapidly spread the infection. Even if it were possible to destroy all old leaves in a garden, control of the disease would not be assured. Old leaves bearing the fungus may be carried far by the wind and deposited near enough to rose plants to bring about infection. But even more important is the fact that the summer spores of the fungus are carried long distances by the wind, so that diseased plants a mile or more away may provide the necessary spore or spores to initiate the disease in any particular garden.

That the destruction of old leaves, in so far as it is possible, is of some value is doubtless true. The possible sources of early infection can be thus greatly lessened, so that the matter of control during the latter part of the season presents less difficulty. However, no one who depends upon this measure alone will be successful in getting satisfactory control. Sanitation should accompany, but can not replace, protective measures.

Protection—The one measure that has been successful in the control of black-spot is that of protecting the rose by covering the leaf with some fungicide that will prevent the spore of the fungus from penetrating the cuticle. Spores need moisture for germination, and under favorable conditions will send forth a germ-tube and penetrate the leaf within a very few hours. Once within the tissue, no treatment non-injurious to the leaf can be given which will kill the parasite. The problem, then, is to *have the fungicide present on the leaf when the necessary moisture for germination and infection is present.* This means that the fungicide must be applied *before* rains; that it must adhere to the leaf; that it must be so highly insoluble that it is not readily washed away, but not so much so but that it will go into solution as needed; and that it must be fatal to the fungus and uninjurious to the rose.

Bordeaux mixture fulfils these requirements. This is doubtless the most efficient fungicide known. It consists of 5 pounds of copper sulphate (blue stone, or blue vitriol), 5 pounds of good stone or hydrated (*not slaked*) lime, to 50 gallons of water.* The chemical reaction resulting from the mixing of these chemicals produces a blue precipitate which consists, in part, of the active ingredient, copper. It is possible to obtain ready-mixed bordeaux in paste and dry forms which, although not as satisfactory as the home-made mixture, are nevertheless efficient when used at a strength equivalent to the 5–5–50 mixture. These prepared mixtures may be had at most seed and hardware stores.

However, the grower of ornamental plants has imposed an additional requirement for a satisfactory fungicide, not considered important in the control of diseases of other plants. The fungicide must not possess the objectionable feature of discoloring the foliage. Bordeaux mixture so discolors the foliage that its use is practically out of the question. As a substitute for bordeaux the use of ammoniacal copper carbonate is recommended, those advocating its use claiming that it is as efficient as bordeaux. This fungicide does not discolor the foliage. Unfortunately but few reports of experimental work are at hand, so that one must wonder whether or not the efficiency of this substitute is based

*Getting this down to quantities useful to rose-growers, it may be taken as 4 ounces of copper sulphate and 4 ounces of lime to 2½ gallons of water.—Editor.

on opinion rather than on experiment. Several years ago the writer* conducted comparative tests of ammoniacal copper carbonate and bordeaux mixture, with the result that the copper carbonate solution was found to be much less efficient in the control of black-spot.

Other materials tested by the writer were liquid lime-sulphur solution and a finely ground mixture of 90 parts sulphur and 10 parts arsenate of lead. The lime-sulphur solution was not as efficient as the bordeaux, but was more so than ammoniacal copper carbonate. It causes some discoloration of the foliage. The sulphur-lead dust was as efficient as bordeaux and did not greatly discolor the foliage. A dry dust was found to be easier to handle and apply than a liquid fungicide. The material tested possesses both fungicidal and insecticidal properties, the arsenate of lead powder being efficient in the control of chewing insects. It is now possible to obtain a combination dust containing sulphur, lead, and nicotine which makes the mixture efficient in the control of sucking as well as chewing insects.

It is the opinion of the writer, based on the limited amount of experimental work which has been done to date, that the use of the dust mixture presents the most promising possibilites for a satisfactory fungicide to use in the control of black-spot. Recent advancements in the manufacture of dusting materials and machinery make it highly desirable to have additional experimental work conducted. There is no reason to doubt that an entirely efficient fungicide which will not discolor the foliage may be found, and at present the possibility of this material being had in dust form seems most promising.

Regardless of whether the materials used are dry or liquid, the following facts must be borne in mind. The material must be applied *before* the disease appears, since the fungus lives within the tissues of the leaf where it cannot be reached by any fungicide. This means that in New York state the first application must be made usually the latter part of May. The fungicide must be applied before rains, not after, because it is during rainy periods that infection takes place.

Thoroughness is essential. If one will keep in mind the fact that it is necessary to have the entire upper surface of the leaf covered with the fungicide, this point will not be overlooked. If a liquid is used it is not advisable to apply so much to the plant that it drips from the leaves; and if a dust is used it is unnecessary to supply sufficient material to have it particularly conspicuous on the foliage.

Applications of fungicides should be made at weekly or ten-day periods, depending on the weather and rate of growth. Frequent rains will wash the fungicide from the leaves and necessitate more numerous applications. The new growth of leaves and new leaves must be protected.

Beginning the latter part of May, in regions having a climate similar to that of central New York state, from seven to twelve applications will be necessary to provide adequate protection throughout the summer. As soon as the first leaves are well out, they should receive a protective covering of fungicide. This will prevent the winter spores from infecting the leaves; and by making thorough subsequent applications it is possible to keep the fungus from gaining a foothold in the garden. The old adage that "an ounce of prevention is worth a pound of cure" inadequately expresses the importance to be attached to prevention, for in this case, to cure a diseased leaf is absolutely impossible. The leaf is destroyed, and a new one must be grown in its place. However, an ounce of fungicide used in a timely application early in the season may be worth a pound of the same material at a later date.

*Trans. Mass. Hort. Soc. **1918**:82–90; also, The American Rose Annual **1918**:67–70.

MATERIALS AND APPARATUS

Materials.—Those who wish to prepare their own bordeaux mixture may obtain detailed directions in any garden manual. It is thought that those wishing to use this fungicide will prefer the prepared mixtures which may be purchased in small quantities and are made ready for use by the addition of water. Practically all seedsmen and hardware dealers carry one or more brands of bordeaux mixture, and so far as the writer knows there is little choice between brands so long as one uses sufficient material to give the equivalent in copper of the home-made 5–5–50 mixture. Directions on the containers will indicate the correct proportions of material and water.

Ammoniacal copper carbonate is prepared as follows: for 10 gallons of solution, 1 ounce of copper carbonate and 10 ounces of ammonium hydroxide (concentrated, sp. gr. 0.90) are needed. Both chemicals may be had from drug stores. Dilute the ammonia in seven or eight parts of water. Make a paste of the copper carbonate with a little water. Add the paste to the diluted ammonia and stir until dissolved. Add enough water to make 10 gallons. For small quantities, use in the same proportions. The solution loses strength on standing and so should be prepared as needed. It will not materially discolor the foliage but is probably less efficient than bordeaux mixture.

Some few may prefer to use lime-sulphur solution, although this material is certainly no more efficient for black-spot than bordeaux mixture and discolors the foliage almost as much. The commercial concentrated solution testing 32° Baumé, which may be obtained from hardware dealers, should be diluted with water at the rate of 1 gallon of the concentrate to 50 gallons of water.

The dust mixtures should be obtained from the manufacturers or dealers, ready mixed. The one with which the writer experimented, and which was as efficient as bordeaux mixture, is known as the "90–10 mixture." It consists of 90 parts finely ground sulphur and 10 parts arsenate of lead. Such a mixture is both a fungicide and an insecticide. As previously noted, it is now possible to get a dust mixture containing sulphur, arsenate of lead, and nicotine. This mixture is efficient in the control of fungi and chewing and sucking insects.

It is also possible to obtain lime-sulphur and bordeaux mixture in dry form. Most of these materials are prepared with the idea of their being used as sprays and not as dusts. There is, however, a copper-sulphate and lime-mixture which is designed for use as a dust. This material will probably give satisfactory control of the disease but will discolor the foliage. Experimental work with this and other materials should be conducted.

Some of the manufacturers of the sulphur-lead dust mixtures are: Niagara Sprayer Company, Middleport, N. Y.; Dosch Chemical Company, Louisville, Ky.; Corona Chemical Company, Milwaukee, Wis. Many chemical companies which in the past have handled spray materials are now marketing some form of dusting materials. In general it may be said that dusting as a substitute for spraying is still in the experimental stage, so that it is well for one to proceed with care in the use of any untried material.

Apparatus.—Small hand sprayers, holding two to three gallons of liquid and costing in the neighborhood of $10, may be purchased from most hardware dealers. The one used by the writer was obtained from E. C. Brown and Company, Rochester, N. Y.

Hand-dusting machines, costing from $1 to $20, may be had from the following manufacturers: Corona Chemical Company, Milwaukee, Wis.; Dust Sprayer Company, 1415 St. Louis Avenue, Kansas City, Mo.; Leggett and Bros., 301 Pearl Street, New York City; Niagara Sprayer Company, Middleport, N. Y.; Tow-Lemons Company, Springfield, Tenn.; E. C. Brown and Company,

Rochester, N. Y.; California Sprayer Company, 6001–11 Pasadena Avenue, Los Angeles, Calif.; and numerous others. Without indicating any choice, the writer can only state that he has used hand dusters made by the Niagara Company, the Corona Chemical Company, the Tow-Lemons Company, and Leggett and Bros., and has found the machines quite satisfactory. The cost of the machine will depend upon the use one has for it; if for only a few plants, a machine costing but a few dollars is adequate, while for fifty or more plants a machine costing from $10 to $20 will be found more satisfactory. It is advisable that before purchasing either machine or materials the grower write to several companies for descriptive literature and prices.

Applications of dust are best made in the early morning or in the evening when the air is still. Some growers prefer to dust in the early morning hours while the plants are still moist with dew, although no experiments are at hand to prove that moist foliage is essential. The minute dust particles lodge among the hairs on the leaves in sufficient numbers to provide protection, even though one standing a few feet away can not detect the presence of any dust on the foliage.

In spraying, use high pressures so that the liquid may be converted into a very fine mist as it leaves the nozzle. To merely sprinkle the plants is a waste of time and money.

Correspondence relating to rose diseases and their control will be welcomed by the writer. If you are in doubt as to the identity of any particular trouble, send specimens, together with a letter giving what observations you have made. Inquiries will be cheerfully answered and the grower supplied with all available information concerning the disease in question.

The Conquest of Black-Spot

From various sources came statements as to the successful rose-growing of Mr. Edwin M. Rosenbluth, of Wallingford, Pa. (near Philadelphia), whose new rose, Greatheart, has recently been registered by the American Rose Society. Inquiry brought from Mr. Rosenbluth the subjoined detailed reply, and when the Editor wrote to Dr. Robert Huey for confirmation, that great rosarian replied: "Mr. Rosenbluth's garden is particularly free from fungoid diseases, and I believe that much of his success in controlling black-spot is due to persistent spraying, and to his thoroughness in carefully collecting and burning at once all diseased foliage."

It will be noted that there is no conflict with Dr. Massey's treatment in this copper-carbonate spray method, and that Mr. Rosenbluth admits that the foliage shows the stain of the copper salts which protect against the disease. Plate X shows

a section of Mr. Rosenbluth's garden, and there is inset in the picture a rose bush showing the deposited spray.

Mr. Rosenbluth's letter follows:

"Answering your inquiry, it is with pleasure that we describe the method that has eliminated black-spot from our rose-garden, comprising nearly 1,200 specimens of Hybrid Teas, Teas, Hybrid Perpetuals, climbers, and the like.

"The accompanying formula is our principal spray—ammoniacal carbonate of copper solution. This spray controls mildew as well. It should be used every five days to a week, under and on the tops of foliage.

"First. As is well known, the affected foliage must be removed from the plants and the ground and burned. In an aggravated case, it would be well to first spray with bordeaux mixture, using 5 ounces in a gallon of water.

"Second. It is important during the first or second week of November that the beds receive a very light dressing of commercial sulphate of iron. This will destroy the spores of the fungus on the ground and prevent them from being held dormant under the covering of any litter used in protecting plants.

"Third. Start to spray, about May 5, with the ammoniacal carbonate of copper solution, which will check mildew, the spores of which are becoming active at this period. Spray very lightly at this date.

"Fourth. About the middle of May you will find aphis or green fly getting busy. They can be crushed between thumb and finger in the beginning, or easily destroyed with the Black-leaf 40 solution.

"Fifth. Shortly after this period you will find the slug worm eating holes in the foliage from the under side. They are easily eradicated by a spraying of bordeaux-lead solution applied on the under side of the leaves—the arsenate of lead conquering the worm, and the bordeaux mixture checking progress of the fungus which is always present. We have mentioned these insect pests as we believe they are contributory factors in spreading disease.

"Sixth. If you have any varieties of roses that are particularly susceptible to black-spot, such as Lyon Rose or Juliet, it is better to take them out and burn them. Spot is very infectious and spreads quite rapidly.

"Seven. After the main blooming season in June, it is advisable to spray, starting July 5, with the bordeaux mixture and repeat every three or four weeks, naturally suspending the application of carbonate of copper solution when using the bordeaux. We are aware the latter mixture is objectionable on account of the resultant discoloration of the foliage, but heroic treatment is necessary where the disease has gained headway. Be careful, however, not to make the solutions so strong as to scorch the tender foliage.

"To make the ammoniacal carbonate of copper solution, proceed as follows:

"Take 5 gallons of water, ½ ounce of copper carbonate (chemically pure) and 4⅘ ounces of ammonia water, 16° or 10 per cent.

"The ammonia is diluted with seven or eight parts of water, and a paste is made of the copper carbonate with a little water. Add the paste to the diluted ammonia and stir until dissolved. Enough water is added to make 5 gallons. This mixture loses strength on standing, and should be made as required.

"We spray with the Auto-Spray, holding about 2½ gallons. One pumping will last for about five minutes. Be sure to use elbow connection at nozzle—this helps wonderfully in reaching the lower surfaces of foliage.

"The above spraying solution has the advantage that it does not show very noticeably on the foliage. (See Plate X.) It is very effective in controlling mildew and will check black-spot if used in time.

"It is of vital importance that the copper carbonate be chemically pure;

our experiments have proved the commercial article worthless for this purpose. To get the full benefit, the solution should be continually agitated when spraying as the copper carbonate has a tendency to settle at the bottom of the sprayer.

"The soap solution to be used in connection with the copper carbonate spray for roses, as above, is made as follows: One bar Fels' Naptha Soap (weight 10 ounces) cut up fine. Mix with 2 quarts of hot water and allow to boil until thoroughly dissolved. Mix with enough cold water so that the completed liquid will make 2 gallons. Let stand until cool. Use one quart of this soap solution with every 2 gallons of spray—pouring the soap solution in last, after the spraying ingredients have been thoroughly mixed in water; then shake before using."

Another Black-Spot Treatment

It was during an incidental call upon the Editor that Mr. B. G. Pratt, a well-known manufacturing chemist of New York, mentioned his success in controlling or avoiding black-spot and mildew on his roses. He has since written thus:

To the Editor of The American Rose Annual: Until you spoke of black-spot on roses a few days ago, I did not realize what a serious trouble it was to other rose-growers. Personally, I hardly know what it is. I certainly do not know which varieties are more susceptible than others; mine are all immune.

I am not an extensive grower, but have 150 to 200 rose bushes of the old standard varieties: Crimson Rambler, Dorothy Perkins, American Pillar, Dr. W. Van Fleet, and Silver Moon among climbers; Frau Karl Druschki, Captain Christy, Soleil d'Or, Ulrich Brunner, Persian Yellow, and many hardy Hybrid Perpetuals I do not remember; in Hybrid Teas I have White and Pink Killarney, Los Angeles, Wm. R. Smith, Mrs. Aaron Ward, Mrs. Ambrose Ricardo, Helen Gould, Jonkheer J. L. Mock, Betty, Ophelia, and the like.

The only time I have ever had black-spot on any of my rose bushes was two years ago, when I lost four Hybrid Teas from the intense cold. I replaced them with pot-plants to fill up the bed, but the black-spot disappeared after the regular treatment last year.

My method of treating roses is as follows: Just as the leaf-buds begin to swell, I spray the bushes thoroughly with scalecide, diluted 1 part to 15 parts of water, and spraying the ground around the bushes as well. Select a nice clear day when the temperature is not colder than 40° Fahr.

When the foliage comes out and the first bloom buds begin to develop, I watch for green aphis and then spray thoroughly with sulfocide, soap, and nicotine sulphate (Black-leaf 40) in the following proportions: one tablespoonful of sulfocide, one tablespoonful of laundry soap (melted in hot water), and one teaspoonful of Black-leaf 40 to three quarts of water. A more exact formula is two fluid ounces of sulfocide, two ounces of soap, and three teaspoonfuls of Black-leaf 40 to a three-gallon spray-tank. I repeat this spray every ten days to two weeks all the summer, and never let three weeks pass without spraying.

Always see that there is no arsenate of lead or bordeaux in your sprayer. The spray I have mentioned will not leave any marking on the foliage or flowers in bud if you take the trouble to shake off any surplus or drops that accumulate around the bottom edges of the leaves.

This spraying program also takes care of mildew, aphis, and leaf-hopper, and will give you perfect blooms on roses like Soleil d'Or, which are so often disfigured by mildew or some fungous trouble. B. G. Pratt.

PLATE X. The Rose-Garden of Mr. E. M. Rosenbluth — to show healthy condition of plants. Inset at right is rose Louise Catherine Breslau, to indicate proper showing of spray on leaves. (See page 87.)

Insects That Hunt the Rose

By C. R. CROSBY and M. D. LEONARD
of Cornell University

EDITOR'S NOTE.—In the 1916 Annual there was printed the first comprehensive study of rose insects, with the last word as to their control. To meet the present demand, that article, brought up to date by its authors, is again printed, with its illustrations, there being added a later article on another insect and certain notes on a current "potato scare."

THE ROSE APHID (*Macrosiphum rosæ* Linnæus).—One of the most troublesome insects attacking the rose is a small green or pinkish plant-louse (Fig. 1). This rose aphid is widely distributed throughout the world wherever the rose is grown. It infests roses both in the open and in the greenhouse. In the colder parts of the country the plant-lice pass the winter in the form of small black shining oval eggs which are attached to the bark near the buds. In the South, where the winters are mild, no eggs are deposited and breeding continues throughout the year. The winter-eggs hatch with the opening of the buds in the spring and the young lice become mature in from ten days to two weeks. They are all females and begin to give birth to living young at the rate of about four to six a day. Each female is capable of producing from thirty to forty-five young in the course of her life. On an average, about twenty-five days is required for each generation, and the number of generations a year depends upon the length of the growing season. The great majority of the lice are wingless, but occasionally winged forms are produced. The latter are able to fly to other plants less badly infested and there find more abundant food for their offspring. The mature plant-louse is about one-twelfth inch in length, varying in color from green to pinkish. In the winged forms the thorax and sides of the abdomen are spotted with black. The antennæ, cornicles and tips of femora are also black.

FIG. 1. The rose aphid (*Macrosiphum rosæ*): Winged and apterous females. (After Essig.) Enlarged.

The lice reproduce with great rapidity and soon cover all the tender parts of the plant. They cluster in great numbers on the tender tips and on the unopened buds. They feed by

sucking out the plant juices through the tube formed by the slender bristles of the beak. The tips of the branches are often stunted and the infested buds either fail to open entirely or produce only deformed and imperfect flowers.

Control.—Many of the lice may be dislodged with a stiff stream of water from the garden hose. In many cases this is the most practicable way of controlling the pest, especially in small gardens. Good results may also be obtained by using nicotine sulphate* (containing 40 per cent nicotine) at the rate of one part in eight hundred parts of water, to which should be added a small amount of soap to make the liquid stick and spread better. Where only a small quantity is needed, put one teaspoonful of the nicotine sulphate in two gallons of water, adding about one ounce of soap. Either whale-oil soap or common laundry soap may be used. If the nicotine preparation is not at hand, whale-oil soap or any other good soap, in the proportion of one pound in eight to ten gallons of water, may be used. The spraying should be done with great thoroughness, care being taken to wet all the lice. As it is a difficult matter to wet those on the buds and the tips of the branches, it is a good plan to dip the tips into a dish containing a quantity of the liquid. The aphid may be killed indoors by fumigation with tobacco. Care should be taken not to injure the more tender plants.

The Small Green Rose Aphid (*Myzus rosarum* Walker).—Roses are often infested by this small green plant-louse. It is a more serious pest in greenhouses than where the plants are grown in the open. In many parts of California it is the most serious insect with which rose-growers have to contend. It may be distinguished from the species last treated by the fact that it is only about one-half as large, and that all the individuals are green—there is no reddish form.

Control.—This small green rose aphid injures plants as does the larger species. Control it by the same means.

The Pink and Green Potato Aphid (*Macrosiphum solanifoliæ* Ashmead).—This plant-louse is better known as a pest on potatoes, spinach and kale. Recent experiments have shown that it is an important factor in the transmission of the mosaic disease of potatoes and spinach. In the cooler parts of the country the insect passes the winter in the egg stage on the rose and several generations in the spring and early summer may develop on this plant. As a rose pest it may be controlled by the measures recommended for the rose aphid.†

*Obtainable commercially as "Black-leaf 40."—Editor

†Editor's Note.—A recent trade-paper note hinted at a choice to be made between roses and potatoes, and intimated that in certain sections of Maine all roses would have to be destroyed in order to prevent disaster to the important crop of "seed" potatoes there grown. Reference was at once had to Dr. Edith M. Patch, of the Maine Experiment Station, who kindly supplied the following note:

The Potato Aphid (*Macrosiphum solanifoliæ* Ashmead).—Over-wintering on the rose in the egg stage, the potato aphid hatches in the spring at the time the new plant-growth

There are in the eastern United States three common species of sawflies, the larvæ of which feed on rose foliage.

THE THREE ROSE SLUGS

THE AMERICAN ROSE SLUG (*Endelomyia rosæ* Harris).—This rose slug is a native American insect and is widely distributed throughout the eastern United States, but is more abundant in the northern part of its range. The parent four-winged flies (Fig. 2) are deep shining black in color and about one-fifth inch in length. They appear on the rose bushes soon after the leaves open and may be found until the bushes are in full leaf. The female is provided with a sharp ovipositor with which she inserts her eggs into the tissue of the leaf between the upper and lower epidermis. The eggs hatch in ten days to two weeks, and the young slugs feed mostly at night, skeletonizing the upper surface of the leaves. The slugs are at first greenish, but later become opaque yellowish. They become full grown in two or three weeks. When mature the slug descends to the ground and there at the

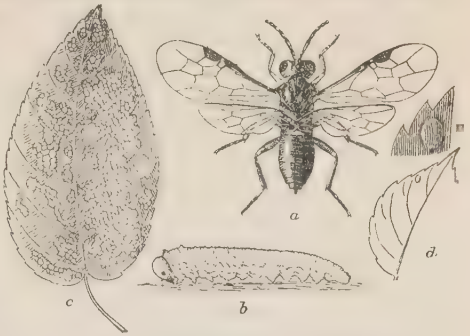


FIG. 2. The American rose slug (*Endelomyia rosæ*): *a*, adult sawfly; *b*, mature larva; *c*, work of larva on rose leaf; *d*, section of rose leaf showing location of egg near upper margin; *e*, egg in situ on bit of rose leaf. (After Chittenden.)

starts, and the spring forms develop on the rose. It has the same pronounced color varieties as *Macrosiphum rosæ*, being either pink or green. On this account, and because of a similarity in size, these two species are often confused with each other, though the jet-black cornicles of *Macrosiphum rosæ* make a distinguishing feature, as do structural differences discernible under the microscope.

The winged forms migrate to the potato (and other annuals) where the summer generations are developed. Dispersing over the potato field, these insects carry the disease known as "potato mosaic" from sick plants to healthy ones. In the fall there is a migration back to the rose.

Control.—While on the rose, the potato aphid should yield to any treatment that will control *Macrosiphum rosæ*. Such treatment previous to the spring migration not only benefits the rose but, in certain localities, the potato crop as well.

Fortunately, from the standpoint of rose-growers, potato mosaic assumes its greatest economic importance in localities which, for the most part, are not in the "real" zone of the cultivated rose—that is in those districts in the north where seed potatoes are grown for the southern planter.

Those interested in the relation of this aphid, common on rose, to the potato mosaic are referred to Bulletins 292 and 303 of the Maine Agricultural Experiment Station.—EDITH M. PATCH.

depth of an inch or more constructs a fragile cocoon within which the winter is passed. There is only one brood annually.

The Bristly Rose Slug (*Cladius pectinicornis* Fourcroy).—This enemy of the rose was introduced into the United States from Europe nearly half a century ago. It is now widely distributed throughout the eastern United States, but is more injurious southward. The parent insect is a four-winged fly, black in color and a little longer than the species previously mentioned. The flies appear about the time the roses are coming into leaf, and the female inserts her small, white, rounded eggs into the upper surface of the leaf petiole. The eggs hatch in seven to ten days. At first the slugs merely skeletonize the leaves, feeding on their upper surface, but when older they eat out large irregular holes in the edge of the leaf, often devouring all except the stronger ribs. When mature the larva is about three-fifths inch in length, yellowish or green in color, and the whole surface especially at the sides, is more or less bristly. The larvæ grow rapidly and soon complete their development. There are three generations annually in the North, and possibly four in the South. The cocoons of the summer generations are attached to the lower surface of the leaves or to twigs or nearby objects. The winter cocoons are made among fallen leaves.

The Coiled Rose Slug (*Emphytus cinctus* Linnæus).—This injurious sawfly was apparently introduced from Europe into Boston in the late eighties and is now well distributed throughout the northeastern United States. This sawfly can be distinguished from the two preceding by its larger size, and by having a wide band across the middle of the abodmen. The females appear soon after the leaves unfold and deposit their eggs singly on the under side of the leaves. The larvæ devour the entire substance of the leaves, feeding along the edge with the tip of the body coiled beneath it. The mature larva is about three-fourths inch in length; the upper surface is metallic green, spotted with white, and the lower surface and legs are grayish white. The head is yellowish orange with a black stripe in the middle. The first thoracic segment is blue and the last two are gray. When full grown, the slug deserts the leaves and bores into the pith of a dead rose branch or some other nearby plant where the pupal stage is passed. There are two broods annually.

Methods of controlling rose slugs.—Although rose slugs are often troublesome, they can be controlled in several ways. A strong stream of water from the garden hose if applied every few days is very effective in ridding the bushes of these pests. The slugs may also be killed by application of arsenicals. For this purpose, arsenate of lead is preferable. It should be applied at the rate of two pounds in fifty gallons of water or bordeaux mixture (=one ounce to one and one-half gallons). Hellebore is also an effective insecticide, and may be used at the rate of one ounce in two or three gallons of water, or dusted on the foliage dry when diluted with double its weight of powdered plaster or cheap flour. Tobacco extract (nicotine sulphate, or "Black-leaf 40") as recommended for the control of the rose aphid will also be found effective against the slugs. The control of mildew and black-spot usually includes control of this insect.

The Rose Leaf-Hopper (*Typhlocyba rosæ* Linnæus).—The leaves of rose bushes are often injured to a considerable extent by a small nearly white leaf-hopper which feeds on the under side of the leaves. The leaves become yellowish, due to the feeding punctures of the insect, and if the infestation is severe they often turn brown and die. The young leaf-hoppers hatch in the spring from eggs inserted in the bark on rose bushes and mature in June and July. Most of them then migrate to other plants where a summer generation is produced.

Control.—The rose leaf-hopper may be controlled by spraying with tobacco extract as suggested for the control of rose aphid. In spraying be sure to hit the under side of the leaves.

The Rose Leaf-Roller (*Archips rosaceana* Harris).—The rose leaf-roller is frequently found in greenhouses, though it is not always sufficiently abundant to become a serious pest. It is widely distributed throughout the United States, and attacks roses both in greenhouses and out-of-doors. The black-headed olive-green caterpillars feed on the leaves and blossoms, which they roll and web together with fine silken threads. They become full grown in about a month and pupate within the rolled leaves. The light brownish moths with banded wings emerge in two or three weeks and deposit their eggs in masses on the leaves. On roses grown in the open there are two broods annually, and in the greenhouse the caterpillars become troublesome in the spring.

Control.—The rose leaf-roller may be controlled by thorough spraying with arsenate of lead, one ounce to one and one-half gallons of water, provided that the applications be made early, before the plants become so large as to make it difficult to cover all the foliage with the poison. Spraying should always be supplemented by hand-picking. Careful watch should be kept for any indication of injury, and when found the caterpillars should be crushed or destroyed in some other way.

The Rose Chafer, Rose Bug, or June Bug (*Macrodactylus subspinosus* Fabricius).—This well-known beetle, a serious enemy of roses, is generally distributed throughout the eastern United States. It is most troublesome in sandy regions, especially where waste grass lands abound. The adult beetle is about one-half inch in length, grayish brown in color, with long ungainly legs (Fig. 3). The beetles emerge from hibernation about the end of May or middle of June and feed in great numbers on the blossoms and leaves of rose bushes, often entirely destroying the bloom. After feeding for some time the female flies to nearby grass lands, burrows into the ground to the depth of 3 to 6 inches, and there deposits her smooth white oval eggs, about one-twenty-fifth inch in length, singly in little pockets in the soil. The female normally oviposits three times, and about twelve eggs are laid at each oviposition. In New York most of the eggs are laid during the last week in June and the first half of July. Sandy soils are selected for oviposition; the heavier soils are rarely infested. The eggs hatch in two to three weeks. At first the grubs feed on decaying vegetable matter but later they attack the roots of grasses. By November the larvæ become mature. At this time they resemble the common white grub, but are only about four-fifths inch in length. When full grown they descend to the depth of about a foot and spend the winter curled up in oval earthern cells. In the spring they come nearer the surface and may resume feeding for a short time. In New York most of the grubs transform about the last of May or first of June to pupæ in earthen cells 3 to 6 inches beneath the surface. The beetles emerge three to four weeks later and fly to vineyards, rose-gardens, or other places.

Fig. 3. The rose chafer (*Macrodactylus subspinosus*): *a*, female beetle; *b*, anterior part of male; *c*, pygidium of male; *d*, abdomen of male; *e*, larva; *f*, pupa. (After Riley.)

Control.—This insect is a difficult pest to control. Apparently the beetles do not relish foliage which has been coated with arsenate of lead alone. If, however, cheap molasses or glucose is mixed with the poison the beetles will eat it readily and many are killed within twenty-four hours. When the beetles are

very abundant, however, much damage will be done before they succumb to the effects of the poison. Hand-picking the beetles into pans containing a little kerosene will greatly reduce their numbers. This must be repeated at short intervals as long as the beetles continue to invade the rose-garden. If the beetles are very abundant on choice plants, screens made of mosquito netting will give effective protection. Certain extensive rose-growers have reported successful results in the control of rose chafers by the use of a proprietary insecticide known as "Melrosine," if used often enough to catch the successive "crops" of the brood.

The Rose Midge (*Neocerata rhodophaga* Coquillett).—This midge has been injurious to roses grown in greenhouses in many parts of the country. In some localities it has been found to be one of the worst pests with which the rose-grower has to contend. It seems to prefer the Hybrid Teas.

The adult is a small yellowish midge-like fly about one-twenty-fifth inch in length. The females deposit their minute yellowish elongate eggs beneath the sepals of the flower-buds or between the folded leaves of the leaf-buds. The eggs hatch in about two days and the young maggots develop rapidly within the buds, feeding upon the juices and tender tissues of the undeveloped leaves and flowers. Early in the season, when the maggots are not so numerous, the buds are not killed outright, but are able to open, although the leaves and blossoms are more or less deformed. Later in the season the maggots are more numerous, and the buds are so severely injured by their presence that many of them fail to open at all. The young buds become brown and shriveled, due to the attacks of the maggots. The mature maggot is about one-fourteenth inch in length and whitish in color or often tinged with reddish. The larvæ become full grown in five to seven days and drop to the ground where, slightly below the surface, they pupate, and in about eight days emerge as adult flies. In summer, therefore, the total life cycle is completed in about two weeks. The maggots are present in injurious numbers from June to October or November, but are, as a rule, most troublesome during June and July. The winter is probably passed in the pupal stage in the greenhouse soil.

Control.—Under greenhouse conditions this pest can be controlled by the following methods, if practised with any degree of care. When the midge is abundant, the ground in the rose-houses should be covered with a one-fourth to one-half-inch layer of tobacco dust and the houses given nightly fumigation with nicotine papers or volatile nicotine preparations. These can be easily obtained

from dealers in insecticides and full directions for their use will be found on the packages. If the infestation is severe, the nightly fumigation should be continued for about two weeks or until no flies are found. Then the houses should be fumigated every other night for another ten days. By such methods all the flies should be killed before they can deposit eggs. After the houses have been rid of the pest, care should be exercised so that no infested plants are again introduced. One infested plant will serve as a center and in a very short time the whole cleaning-up process will have to be gone over again.

The Rose Scale (*Aulacaspis rosæ* Bouché).—This scale insect occurs wherever roses are grown. The larger female scales are about one-tenth inch in diameter, snow-white in color, nearly circular, with the two yellow cast skins at the margin. The male scales are also white but shorter and narrower with three longitudinal ribs. The scales are more abundant in damp situations. Rose bushes are sometimes so badly infested that the stems have the appearance of being whitewashed. In such cases the plants are weakened, growth is retarded and the flowers are prevented from attaining their full size and beauty. The rose scale apparently hibernates in all stages from egg to adult. After April, breeding is almost continuous. There are at least two broods annually and three may occur in New Jersey and southward.

Control.—A thorough application of lime-sulphur solution at the rate of one gallon of the commercial preparation testing 32° Baumé in eight gallons of water, applied in the winter or early spring, will be found effective in controlling this scale. In addition to the above treatment it may be advisable, in some cases, to cut off and burn the worst infested stems.

The Rose Curculio (*Rhynchites bicolor* Fabricius).—This bright red snout-beetle (Fig. 4) with black legs and snout, about one-fourth inch in length, is widely distributed throughout the United States. In the northern states the beetles appear on the rose bushes early in June. In feeding, the beetle eats holes with its beak into the unopened buds and fruit and also punctures the flower-stems. The leaves are also attacked. Some of the injured buds fail to open, while those that do expand often have the petals riddled with holes. The light yellowish white, oval eggs are deposited in holes made

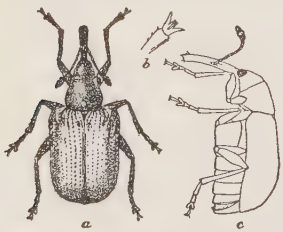


Fig. 4. The rose curculio (*Rhynchites bicolor*): *a*, female beetle; *b*, claw; *c*, female in outline from side; *a*, *c*, enlarged; *b*, more enlarged. (After Chittenden.)

in the buds and young fruits. They hatch in a week or ten days and the white legless grubs feed on the seeds until full grown. In late summer the full-grown larvæ desert the fruits and descend to the ground where they soon change to pupæ and hibernate in this condition. There is but one brood annually.

Control.—In the flower-garden, persistent hand-picking the beetles into a pan containing a little kerosene oil will be found an efficient and practical means of control. In larger plantings it may sometimes be found necessary to resort to arsenical sprays. Arsenate of lead, two pounds in fifty gallons of water (one ounce to one and one-half gallons) should be applied at the first appearance of the beetles. As the beetles breed to a great extent in wild roses, much damage may be avoided by destroying the wild roses in the vicinity of the garden.

The Rose Slug-Caterpillar (*Euclea indetermina* Boisduval).—In recent years, roses in the southern states have often been injured to a slight extent by a caterpillar of striking appearance, orange in color and covered with tufts of spines (Fig. 5). The eggs from which these caterpillars hatch are laid in July, singly or in small groups, slightly overlapping each other. They hatch in about nine days, and the young caterpillars feed on the leaves, remaining on the under side. Toward the middle of September the caterpillars become full grown. They are then about three-fourths inch in length. The caterpillar hibernates in a rounded chocolate-colored cocoon which is formed on the ground among loose rubbish. The moths emerge the following July. The moth has a one inch wing-expanse. The fore-wings are cinnamon-brown crossed by a band of green. The hind-wings and abdomen are pale brown, the thorax like green plush.

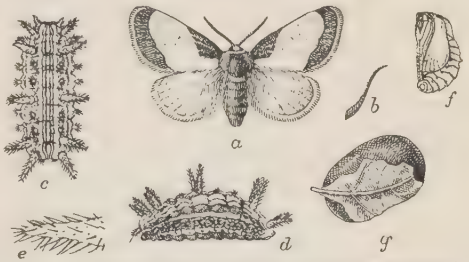


Fig. 5. The rose slug-caterpillar (*Euclea indetermina*): *a*, female moth; *b*, male antenna; *c*, larva, dorsal view; *d*, larva, lateral view; *e*, spine of larva, much enlarged; *f*, pupa; *g*, cocoon. (After Chittenden.)

Control.—If but a few bushes are attacked, hand-picking the caterpillars will control this insect. Care should be taken, however, to wear a glove during this process. An irritating fluid is secreted at the base of the spines. When the caterpillars are handled the tips of these spines are broken off and enter the skin causing a painful irritation. If a large number of bushes are attacked, the caterpillars may be killed when young by a thorough application of arsenate of lead, two pounds in fifty gallons of water, or one ounce to one and a half gallons.

Fuller's Rose Beetle (*Aramigus fulleri* Horn).—This beetle is a well-known and destructive greenhouse pest which often attacks roses. The adult is a small grayish brown snout-beetle (Fig. 6) about one-half inch in length, which feeds upon the foliage. The eggs are deposited in masses on the stems just above the ground or upon the soil near the base of the plant. These hatch in about a month, and the small white grubs, about one-third inch in length, burrow into the soil and feed upon the roots of the plant. It is in this stage that the greatest injury is inflicted.

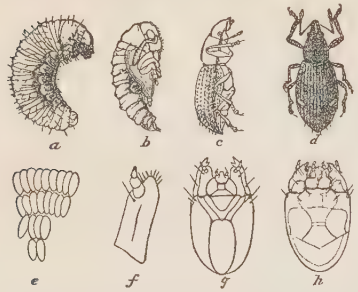


Fig. 6. Fuller's rose beetle (*Aramigus fulleri*): *a*, larva; *b*, pupa; *c*, beetle, outline side view; *d*, same, dorsal view; *e*, eggs enlarged; *f*, left maxilla with palpus; *g*, lower side of head of larva; *h*, upper side of same enlarged. (After Riley.)

Control.—The beetles are very resistant to fumigation with hydrocyanic acid gas and to arsenicals. Persistent hand-picking will tend to hold them in check and they should not be allowed to gain a foothold in the greenhouse. They often congregate upon the plants in the late fall, and this is a good time to destroy them.

The Rose-Seed Chalcis-Flies (*Megastigmus aculeatus* Swederus, and *M. nigrovariegatus* Ashmead).—During the summer one may often see a small brownish, winged insect resting on the rose fruits. Close observation will often show that the female has her small slender ovipositor inserted nearly its full length into the fruit. She is depositing her eggs within the unripe seeds. These eggs hatch into tiny grubs that devour the kernel of the seed and the following spring the adult flies emerge from the seeds and leave the fruit through small round holes in the sides. These insects are not injurious but are often objects of curiosity and interest.

The Strawberry Root-worm Beetle (*Paria canella* Fabricius).* This insect by reason of its sudden change of feeding habit from strawberries to greenhouse roses, has become of prime importance to many commercial rose-growers. It has done very serious damage in several large rose-growing establishments and its control has not yet been satisfactorily worked out.

*Adapted from article by C. A. Weigel, U. S. Dept. of Agric., on page 66, 1920 Annual.—Editor.

The damage to rose foliage is caused mainly by the full-grown beetle, and does not differ materially from the injury done to the strawberry. The entire foliage is badly perforated and ragged, presenting a shot-hole appearance (Fig. 7) as a result of their voracious feeding. These more or less rounded holes, which vary in size and shape, are so close together that the plants look as though loads of shot had been fired into the foliage at short range. The beetles show a marked preference for the new and young shoots, which they badly scar by their peculiar manner of feeding, giving them a very unsightly appearance. Ultimately, the entire growth is badly stunted from the gradual killing of the affected parts, thereby reducing their commercial value.

Fig. 7. Rose foliage infested with strawberry root-worm.

The full-grown, adult beetle (Fig. 8) is about one-eighth inch long, and oval in shape. It is quite variable in color, so that several colored varieties are known, ranging from wholly black to yellowish brown, but ordinarily it has four spots on the wing covers. The common variety is brown in general color, with black markings. The entire insect is highly polished, and the wing-covers are ornamented with longitudinal rows of minute pits.

The larva (Fig. 8) or grub is about the same size, and when full grown it resembles a white grub, the same as is found under sod, except in size. They are found close to the surface of the ground, feeding on the roots of the rose plants.

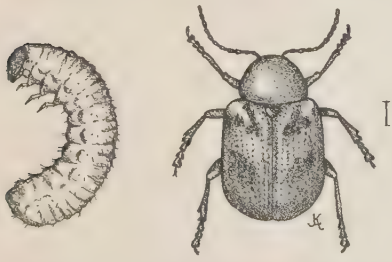


Fig. 8. On left, larva or grub, and on right, mature beetle of the strawberry root-worm (*Paria canella* Fab.). The figures are much enlarged; the beetle is about one-eighth inch in length. The grub feeds on the roots of roses in greenhouses, and the beetle on their leaves.

When the larva is full grown, transformation takes place within a smooth-walled cell which is constructed in the soil for that purpose. Finally, it emerges as the full-grown beetle, the female of which lays the

eggs for the future generation. As far as is now known, the adults hibernate under mulch or other convenient shelter during the winter months. It has been noticed by the florists who have reported damage that the beetles put in their first appearance about the latter part of May, or early in June, and reach their maximum numbers during July. Their feeding may continue throughout the month of August or even later. There may be several broods annually under glass.

The beetles are rarely seen, and have never been observed feeding during the brighter hours of the day. Occasionally they may be collected in dead or dried and curled-up leaves, or under debris among the surface soil. Beginning at dusk and extending to the early morning hours, they may readily be observed feeding on the plants. On being disturbed they play "possum."

Control.—Arsenicals have proved quite ineffective. The best results thus far obtained were by the use of hydrocyanic-acid gas against the adult beetles. Until further progress has been made in the life-history studies and habits of this new rose-pest in greenhouses, it is recommended to fumigate *at night only* with the above gas, using two ounces of sodium cyanide for every thousand cubic feet of space which is to be fumigated, and giving exposure of two hours. The destruction of the adults at this time should forestall a recurrence the following spring and summer, since a very large percentage of the females are killed many months prior to the normal time of egg-laying. Incidentally, as the insects occur in their maximum numbers during June and July, the above treatments fit in conveniently in normal cultural methods.

Growers are also advised not to bring sod or soil into their houses in which strawberries or raspberries, either wild or cultivated, have been growing, because the larva or grub stage occurs in the soil, and such soil is very likely to be the source of an infestation in the greenhouses.

VIGILANCE IS THE PRICE OF ROSES!

Mildew can be cured. *See page 79.*

Black-spot cannot be cured; it must be prevented. *See page 83.*

All rose insects can be controlled, even including the dreaded rose-bug. *See page 94.*

Spray or dust early and often. Don't wait till you see the trouble.

Good Soil for Good Roses

By DR. S. L. JODIDI, Washington, D. C.

EDITOR'S NOTE.—Success in rose-growing depends on many things, but is impossible unless the soil, the laboratory in which the roots must do their wonderful work, is in favorable relation. Dr. Jodidi discusses basic soil relationships for us, to aid in creating rose prosperity.

THE point to be borne foremost in our mind is that the rose is not only a living thing, but one that is fairly tender. From this it naturally follows that, if the rose is to thrive well, it has to be placed in environments as favorable as possible. The very first consideration is the selection of a well-protected, adequately drained plot with abundant sunshine. Having made the proper choice, make sure, above all, that the drainage is actually as nearly perfect as is possible under the circumstances. This being the case, next make up your mind to build a home for the rose as best you can, remembering that the principle of "give and take" applies to the rose as much as to any other plant; nay, in a still higher degree, since the rose is admittedly a heavy feeder.

If you happen to have a heavy, clayey soil you can essentially improve it by anything that will ameliorate the texture of clay; e. g., by the addition of some sandy soil and ashes (preferably wood ashes), as well as of slaked lime. While the sand will make the clay more porous and accessible to air, moisture, and the like, the ashes and lime will also add the important nutritive elements of potash and calcium. But what is of still greater importance is the fact that slaked lime, aside from adding to the soil the necessary element calcium, *unlocks* the great amounts of potash and other elements that are present in clay and which would otherwise be inaccessible to the roses. It goes without saying that adding some humus will have only a beneficial effect upon the soil, the home of the rose.

On the other hand, a light, sandy soil may be improved by the application of organic materials in the form of manure—horse-, cow-, sheep-, or any other kind of manure will do. Peat, muck, mulch, half-rotted leaves, chopped sod may well take the place of manure whenever the latter is not obtainable.

In each case it is best first to take out two feet of ground, or more, and to mix it thoroughly with the humus materials, whereupon the mixed soil is returned to the trench. In cases where the ground happens to be rocky, it seems advisable to cover it with rich soil to the depth of two feet.

Again, if the soil is known to be deficient in one or more food elements, it may be well, in certain cases, to apply commercial fertilizers such as saltpeter, sulphate of ammonia, Kainit, superphosphate, and the like, of which the first two supply nitrogen and the last two potash and phosphorus respectively, Kainit containing also magnesium. Considerable care, however, should be exercised in the application of artificial fertilizers. Thus, the latter should be supplied to the plants in but small portions at a time, since, unlike the humus materials, they are easily soluble in the soil-moisture. As a consequence, the fertilizers—especially the nitrate fertilizers—which are not taken up by the plants are leached out of the soil, particularly in rainy days. Again, never use saltpeter or other nitrates *simultaneously with manure*, as in this case *denitrification* takes place, which causes loss of the important nitrogen.

However, when the roses have already been planted and are well established in the ground, regular watering, or still better, treatment of the plants with liquid manure from time to time, especially during the drier periods, will have a wonderfully beneficial effect upon the growth and bloom. Late in the fall it is well to carefully dig up the ground around the rose bushes, and to add much manure or other organic materials referred to above. This will, to a certain degree, not only protect the plants during the cold season but also add materially to the plant-food of the soil. It is hardly necessary to mention that, beginning with the spring, and up to the late fall, the rose-beds should be cultivated as often as necessary in order to keep out weeds.

It is perfectly true that a good deal of time and labor are involved in the care of the rose. It is true, also, that certain expenses are unavoidable in this connection. But on the other hand, it is well to remember that you cannot have something for nothing, and that for your care you will be abundantly rewarded.

Fertilizing the Soil for Rose-Growing

By P. A. LEHENBAUER
Division of Floriculture, University of Illinois

EDITOR'S NOTE.—No subject is more important either to the amateur or to the commercial rose-grower, than the adequate feeding of the rose roots that make the rose blooms. Professor Lehenbauer has here discussed for us the principles of fertilization in clear fashion.

THE subject of soil-fertilization for rose-culture is a complex problem because of the great variations in types of soil, and what applies to one type of soil does not necessarily apply to another. However, there are some fundamental principles involved in the use of fertilizers, which, if properly understood, may be made use of by any intelligent grower.

Nearly every experienced rose-grower will recommend, first of all, the use of cattle-manure. This is unquestionably a good fertilizer and should be used if it can be obtained. Natural manures serve a double purpose, for they add to the soil valuable food materials and, by means of the resulting humus, make the soil better physically. The latter is, no doubt, often the more important function of manures. Natural manures make soils more friable, make them more retentive of moisture, and permit better aëration. These are very important factors, for as experiments have shown, physical structure, moisture, and aëration of soil have an important influence on the growth of plants. In a soil which contains humus, the roots of the plant can penetrate more readily and thus a better root-system results. If the soil is clayey and compact, the incorporation of manures will make it more open and porous so that water and air can penetrate more readily; while if the soil is light and sandy, the addition of manures will serve in filling up the open spaces and thus make the soil more compact. Soils containing manures thus absorb and retain more readily not only water but also food constituents dissolved in it. Soil-air is necessary, for the roots of the rose plant respire, and, in addition, air is needed for the chemical changes which are constantly going on in soils.

The importance of natural manures in relation to the soil bacteria should be mentioned also in this connection. From

them the bacteria obtain their food, and soil bacteria, like the roots of the rose plant, need a constant supply of water and air. By means of manures the grower is able to supply these necessary conditions to both the rose plant and the bacteria, and thus produce a soil which is favorable for maximum growth. Nothing has yet been found to entirely replace manures.

Natural manures also supply food materials for the rose plant. Although manures contain all the food elements which are usually necessary, these food materials are not, as a rule, in the proper proportion; neither are all the food materials in available form for the plant. It is often necessary, therefore, to use additional fertilizers in order to get maximum results, to grow the finest roses.

A ton of fresh cattle-manure contains on the average approximately 12 pounds of nitrogen, 3 pounds of phosphoric acid, and 9 pounds of potash. When this is applied to plants, it generally stimulates the growth of stems and leaves, due to the fact that the relatively large amount of nitrogen becomes quickly available to the plant. An excessive use of such manure will result in long, soft growth, a characteristic symptom of over-feeding with nitrogen. In other words, there is a high proportion of available nitrogen relative to the available phosphoric acid and potash. This unbalanced condition can be overcome by the use of fertilizers containing phosphoric acid and potash.

When using well-rotted manure a different condition prevails, for then the nitrogen is in a form which is much less quickly available to the plant, while the phosphoric acid and the potash are available in relatively larger amounts. It is for this reason that well-decomposed manures do not produce the effects of overfeeding with nitrogen, as is the case with fresh manures. However, thoroughly decomposed manure in many cases does not contain sufficiently large amounts of available nitrogen to produce a maximum growth of stems and leaves. This is because much nitrogen is lost during the process of decay. In order to make up this deficiency of nitrogen, a fertilizer which contains nitrogen in quickly available form, such as dried blood, is sometimes used.

To sum up: the grower should understand the principles underlying the use of manures, and, depending upon the state

PLATE XI DR. ROBERT HUEY, a veteran Pennsylvania rosarian. (See page 158)

of decomposition and quality of the manure, he must use such other materials as will make it a balanced food material.

As nitrogen has a more or less characteristic effect on the growth of stems and leaves, so phosphorus has an effect on the production of flowers. Experiments at the Illinois Experiment Station have shown that the use of phosphorus compounds in soils increases the number of blooms of roses when compared with the number produced on soil which did not receive a liberal application of phosphorus. Many of our soils are deficient in phosphorus. This phosphorus may be applied either in the form of acid phosphate or in the form of treated bone. Unlike most nitrogen-containing fertilizers, there is little danger of overfeeding when used in reasonable quantities. Further, phosphorus does not leach from the soil as does soluble nitrogen. The phosphorus fertilizers, therefore, may well be incorporated in the soil in quantities sufficient for a year's growth.

The relation between nitrogen and phosphorus also should be appreciated by the grower. Much phosphorus will not give the best results when there is a deficiency of available nitrogen; neither will much nitrogen prove desirable when phosphorus is not present in available quantities. There is a sort of balance between the two, and the grower must learn to find this balance for his particular type of soil and for his type of climate.

In expecting results we must not overlook the fact that fertilizers are effective only when other conditions are favorable. The growing plant is influenced by many conditions, and any one condition may be responsible for poor growth. Soil fertilization cannot be effective when water fails the plant, for in order to utilize the available food materials the plant must have access to a continuous supply of water, with good drainage.

Further, soil acidity must be guarded against, for it also is a condition of soil which makes the use of fertilizers less certain. Temperature, light, and the humidity of the air all are influential in the growth of the plant and may be limiting factors in the utilization of the nutrients in the soil to the fullest extent. It is important, therefore, to appreciate fully the relation of all factors to the growth of the plant. As with other dealings with nature, success is more easily attained if there is a clear understanding of the factors involved.

The Greatest Rose-Producing Center in the World

By ROY McGREGOR, Springfield, Ohio

EDITOR'S NOTE.—From time to time there have appeared in the Annual articles relating to the large quantities of roses distributed from a very lively city in Ohio, but it has been hard to get these producers of roses by the million to tell about it. Mr. McGregor has, as one of a committee of the Springfield Chamber of Commerce, kindly prepared the interesting story which follows:

EARLY in 1918, Mr. Bernard Baruch, Chairman of the War Industry Board, urged upon the nation the necessity of the elimination of luxuries if we were to win the war. Picking out commercial floriculture, Mr. Baruch pointed to that industry as one we could get along well without, and he asked the people of the nation to forget, as far as possible, their interest in plants and flowers in order that the man-power and the coal required by that industry might be diverted to what he insisted were more important uses. With this urgent request of Mr. Baruch came the definite restriction to but fifty per cent of the normal coal used in greenhouse establishments.

It is easy to realize that the large greenhouses depend on the use of coal for the continuous production which is necessary to their existence, and that it is not practicable to completely close down a definite portion of the plant in the winter without virtual destruction of the property.

Our memories will promptly inform us of the outcome. The producers of flowers and plants did curtail to the utmost, but a war-devoted people were not prepared to endure the elimination of flowers from their lives. With high hopes we worked with what men and fuel were permitted to us, and the people wanted more than we could produce. There was established the vital place of floriculture in America as an industry of importance.

This great plant-producing industry in Springfield was originally only a wholesale business, supplying stock to greenhouses all over the country for their local selling. The nation, indeed, came to look to Springfield for large quantities of small plants, and particularly of roses. It was so when the famous Crimson Rambler rose came into prominence, for the first order called

for a half-million plants, and, large as this number sounds, it hardly caused a ripple in the general production of the season during which they were successfully delivered.

It ought to be noted that the Springfield industry is a form of plant manufacture racing with time for quantity production. The main interest is in rapid production to meet a quick and great demand, and time is money. The European breeder says, "I will sell the novelty for a thousand dollars." The Springfield grower asks himself, "How many can I propagate in a year?"

In rose production, the main item of Springfield's business which interests the members of the American Rose Society, the process is unique. While there are several ways to propagate the rose, there are but two ways for commercial purposes—by cuttings and by grafting or budding. Grafting is the method followed by the nurserymen, the work being done with dormant material in the winter. The nurserymen are generally growers in the field only, and for the most part are without greenhouses for propagating purposes. Grafting can be carried on in their large cellars and shipping buildings during the winter. It is one of the oldest arts of plant multiplication, and as a means to secure certain results has its advantages. As with budding, however, as a means of quantity production at the least cost it is much slower and more expensive than the Springfield method of propagation by cuttings.

Grafting aims to establish a strong root-system, though sometimes the union of two individuals between the stock and the bud tends to change the character of the plant. We insist that it is not a natural means of propagation, and that while adopted at times for increasing the quantity of plants, it is more often used to give strength to weak-growing varieties.

The Springfield rose is a rose built on its own root system—like producing like. The form of propagation carried on here is applicable to the rose family as a whole. All varieties go through the same mill, but the mill grinds far from slowly!

In propagation by cuttings the greenhouse is essential if the work is carried on to any large extent. About forty years ago this method was intensively developed in Springfield, primarily at that time to meet the increasing demand from nurserymen for young roses. It was later adjusted to meet the requirements

of a shipping business, not alone to the nurserymen as before, but direct to planters in all parts of the country. The Springfield grower had learned that he was able to produce a rose that could be held in such condition that it might be shipped and planted at any time of the year, and that he was able to produce it cheaper, because he was growing plants five times as fast as the nurseryman, his product being what he terms a fool-proof rose.

With increasing production the use of the mail-order catalogue came in to exploit the new product, and it was soon recognized that the rose-growing industry of Springfield stood without competition in this respect.

The figures of our own Chamber of Commerce tell us that the annual plant production of Springfield approximates twenty-five millions in all sorts, including twelve or fifteen major items. It must be remembered, however, that in roses alone Springfield produced over four hundred different varieties, which, with other plants, tend to make the Springfield mail-order catalogue as welcome all over the United States as the coming of spring.

Springfield holds a brief for the small gardens, those which make their beginnings in the small way. Thus, the Springfield rose-production industry is a real mail floriculture propaganda, resting on its product and established service to justify the widely advertised slogan, "A greenhouse at your door."

Mount Vernon is the center of American patriotic pilgrimage. The old mansion of George Washington is no more a memorial than the garden which also he laid out, in which is the Mary Washington rose, planted by the "Father of His Country" in memory of his mother. The Mount Vernon Association, while not in commercial business at all, does a fine thing in distributing to those who come to Mount Vernon desiring a souvenir of the trip, a plant or flower from this historic spot, especially a plant of the Mary Washington rose. These roses come from the producers in Springfield, who furnish the roses just as President Washington might have had them locally grown.

Nowhere else in the world today can one obtain a million roses or five millions on order. We urge that it is the mass production of our great industry that is tending to make America a land of flowers, and we believe that the service we thus render to the rose is an altogether worth-while one.

Rose Activities in St. Thomas, Ontario

By DR. F. E. BENNETT
President St. Thomas Horticultural Society, St. Thomas, Ont.

EDITOR'S NOTE.—Attention has heretofore been called to the fine spirit and good work characterizing the horticultural societies of the Province of Ontario, which under a wise and beneficent system of provincial or state stimulation now pervade the whole of that great country with their helpful activities. The late lamented W. B. Burgoyne, whose death is chronicled elsewhere in this Annual, and who evinced his love for another Canadian town, St. Catharines, by giving it a municipal rose-garden, as pictured in the 1921 American Rose Annual, was for a time the president of the Ontario Horticultural Society, and the general plan of these organizations, not at all paralleled anywhere in the United States, is such as to focus and direct toward the best ends that spirit found in all Anglo-Saxons, to work together to make something occur.

St. Thomas is a thriving city of some 15,000 or more inhabitants, north of Lake Erie and approximately midway between Detroit and Buffalo. Its Horticultural Society has a large membership. Handled as it is by Dr. Bennett, himself a man of great ability and energy, it does large things. One of these is detailed in the following story, using roses and other flowers in a way not at all ordinary.

ST. THOMAS, Ontario, calls itself "The City of Flowers." Its Horticultural Society has shown much activity in beautifying its railroad surroundings. With five trunk lines and one electrified steam road it will be noted that there are enough railroads to reward beautification.

One of the railroads, the Michigan Central, now operated by the New York Central Railroad, passes through the center of the city, paralleling a residence street for nearly a mile. It was here that the work of the St. Thomas Horticultural Society was undertaken.

Between the railroad and the street is a beautiful boulevard thirty-five feet wide, shaded with good trees and covered with a well-kept sward. In every block we planted two beds, each 4 by 20 feet, in the fall with bulbs in solid colors, labeled for educational purposes, some carpet-bedded with crocuses and others in daffodils and hyacinths. In summertime these bulbs are replaced with geraniums, coleus, and other flowers, making a fine appearance to the tourists on this important New York and Chicago line.

I ought to say right here that it is the plan of the St. Thomas Horticultural Society to have every railroad right of way through

the city become park-like in its surroundings, save, of course, the necessary industrial sidings, which it is expected will be neatly cindered and kept free from weeds and disorder.

In front of the station and yards of the road before mentioned is a seven-acre park, now controlled by the Society. It is laid out in shrubbery and perennial beds, with plenty of summer bloom.

Crossing at right angles to this railroad is the electrified steam road, model in its construction, operation, and management under that great electrical development wizard, Sir Adam Beck. This road is known as the London and Port Stanley Railroad. It is owned by the city of London and operates from that city to Port Stanley, on Lake Erie. Entering the city from the south, after crossing a beautifully wooded ravine, one sees on the left the usual coal-yard, lumber-piles, and the like, but all, influenced by the local spirit, are kept in an orderly condition and mostly screened from the street by flowering hedges, with a well-kept boulevard in front. On the immediate right are the trial-grounds of the St. Thomas Horticultural Society, in which we grow thousands of gladioli, with as many perennials and annuals. It is here that we grow the best plants and bulbs to give as premiums and for sale to our members at coöperative prices.

Along the small park space of this trial-ground is constructed a perennial bed 10 by 100 feet, with all plants labeled. The gladiolus collection is an official testing-plot of the American Gladiolus Society. Ninety thousand square feet in this plot—nearly two acres—are watered by the Skinner irrigation system.

Keeping along past this plot, passengers on the road see on the left a neatly-kept school-garden, for in St. Thomas agriculture is taught in all the public schools by certified teachers. Farther on is an area which has recently been redeemed, the redemption including the removal of an unsightly billboard. (Incidentally, the London and Port Stanley Railroad allows no billboards along its right of way.) Here a border 25 by 200 feet has been planted with native shrubs, wild roses, sumachs, witch-hazels, hawthorns, and many other flowering shrubs, while daffodils were sown broadcast throughout the border.

At the station, which is of the California bungalow type, an attempt has been made to create a typical California "Eden" plot. There are flower-beds all about the station, filled in springtime with rare tulips, hyacinths, daffodils, and crocuses, and in summer with suitable plants. The grounds are protected by an ornamental picket fence, itself the basis on one side for a great hedge of *Philadelphus Lemoinei*, including some 350 plants. Between the fence and the tracks is a fine lawn.

On the right, paralleling the tracks and beyond a concrete driveway, runs a 50-foot lawn with a 700-foot border of roses, shrubs, and perennials. I wish to emphasize the important part played by roses in this border. At the south end of it is a large bed of Polyanthas in color design, principally Erna Teschendorff and Mrs. W. H. Cutbush. Starting at this point, the border is serpentine in shape, with a background formed of tamarisks, hydrangeas, spireas, the Rugosa rose, Hansen, and the splendid F. J. Grootendorst, which, as your readers will know, is in bloom all summer. Peonies are dotted here and there, and also other plants and flowering bulbs. For edging, hundreds of Polyantha roses are used, between which are planted hyacinths and tulips for spring bloom, making this bed a riot of color from early spring until late frost. Next spring we hope to continue this border with azaleas, magnolias, and other hardy shrubs not seen frequently in Ontario.

Now here is the interesting feature of this situation: The whole of the station-ground beautification and its care is under the direction of the St. Thomas Horticultural Society, but it is financed by the London and Port Stanley Railroad, thus giving an outstanding example of wise and effective coöperation. The old saying that "corporations have no souls" certainly does not apply to the systems entering "The City of Flowers."

It is in point, I think, to mention a small part of a section along the same railroad which is being beautified by it at the lake terminal, Port Stanley. The rough slopes and the picnic-ground here have been planted with native roses and shrubs, as well as Persian Yellow, the various Rugosas, and the fine F. J. Grootendorst. So effective has been this planting that some of our members are extending it on lands similarly located.

Accurate and Protected Rose Names

By THE EDITOR

IT WILL be good news to all rose-lovers who have been irritated at the duplications and inaccuracies with which they have had to struggle in buying and handling roses, to know that there has been completed, after several years of painstaking investigation to original sources, a list of all the roses in American commerce. This list takes as authoritative the name actually applied to any rose by its originator, but gives the synonyms under which it may have been circulated. It attempts to give the name of the originator and the year of introduction, where those facts are ascertainable.

The list above referred to will appear in the most important work of its kind ever undertaken, "The Official Catalogue of Standardized Plant Names," about to be issued by the American Joint Committee on Horticultural Nomenclature, of which a subcommittee has worked for more than five years, in comparing and relating the scientific and common names of plants in American commerce, and the fruition of its labors is in the volume above referred to, including something more than four hundred pages and covering in an orderly alphabetical presentation the approved scientific names, the approved common names, and most of the synonyms for both, with special lists, as of rose, lilac, iris, peony, etc., furnished by the separate societies devoted to these items.

There will be enclosed in this Annual a prospectus of this important book, which very many members of the American Rose Society will need to properly conduct their transactions in plants. The rose-list alone would justify the ownership of the book. Immediate ordering will effect a substantial price saving for our members.

In the Annual for 1920, Mr. J. Edward Moon, then president of the American Association of Nurserymen, asked, "Can we have Plant Patents?" in disclosing the unfortunate situation which now prevents such security for mental property in plant origination as is given by the patent laws for the inventing of machines and processes. Following this it is most interesting

PLATE XII. The New American Hybrid Tea Rose, WM. F. DREER. (See page 161.)

to know that a movement abroad has begun a plan of registration, which may eventually be joined in by the United States, affording some protection to mental property in plant origination, at least so far as the name is concerned.

Our kindly correspondent, Mons. Charles Siret, Secretary of the Société Française des Rosiéristes, writes the Editor, giving details of this new organization as follows:

"There are laws in France, since long ago, for copyright to protect poets, musicians, and engineers, while horticulturists who work hard for new sorts and who have seen everyone else making profit through the novelties they have put on the market, themselves have had nearly no benefit.

"Having been unable until now to obtain any controlling law for protecting horticulturists in this matter, the Société Nationale d'Horticulture de France, in agreement with the special societies for fruits, roses, chrysanthemums, and the general horticultural organizations, have agreed upon certain regulations. Without any legal sanction these rules are based for the moment on common honesty.

"We hope similar regulations will be proposed everywhere in foreign countries, for the encouragement of hybridizers."

The propositions referred to have become international so far as France, Belgium, and England are concerned, and there has been established "The International Bureau for Registration of Novelties," the result of a meeting held in London in January, 1921, which proposes the following items of protection to plant-raisers, a succinct statement of the method of which can best be given by here quoting from *The Garden* of London, of January 21, 1922, as follows:

1. That the International Bureau for Registration of Horticultural Novelties, founded by the Federation Horticole Professionnelle Internationale, will commence, on January 1, 1922, with the object of protecting the raisers of new plants, as to (*a*) prior rights of raising; (*b*) ownership of name chosen; (*c*) possibility of claiming both; and also (*d*) adequate advertisement to make the novelty known to the horticultural world.

2. That official forms necessary for declarations will be addressed to raisers on receipt of demand accompanied by the amount of the registration fee, which is 10 francs, plus, if desired, the amount necessary to cover the cost of supplementary declarations, at the rate of 5 francs a line of forty letters, signs or intervals.

3. That official forms can only be obtained from the Bureau Agent, Mons. L. Sauvage, 6 Rue du Debarcadero, Paris 17.

4. That checks and money orders be made payable to M. Sauvage.

5. That, on demand, raisers will receive, without charge, a small booklet containing the Rules of the Bureau and all particulars concerning the keeping of the various registers, confirming the rights of the declarers, and providing for the establishment of international legislation on this subject in due course. The Chamber will be pleased to issue further information on the above from time to time.

America Scores Again

By S. S. PENNOCK, Philadelphia, Pa.

EDITOR'S NOTE.—Many members of the American Rose Society will remember that Robert Pyle, now president of the Society, represented America some years ago at the Bagatelle (Paris) trials, the rose that year receiving highest honors being Jonkheer J. L. Mock. Since then, our own American-raised Los Angeles has received the Gold Medal, and its originator, Fred. H. Howard, has served as a juror in a subsequent season.

In the summer of 1921 America again took the Foreign Gold Medal at Bagatelle, and again it went to Fred. H. Howard for his wonderful Miss Lolita Armour, exhibited as No. 252. The event was made more notable by the attendance as a juror of an ex-president of the American Rose Society, Mr. S. S. Pennock, who writes below of his experiences. (Facing page 112, Plate XII shows Wm. F. Dreer, another Howard & Smith rose of exquisite form and color, and of the same style as Miss Lolita Armour.)

WHEN I was invited to participate in the great French rose event of 1921, I was glad to accept. Reaching Paris, I found most of the jurors assembled on the morning of June 15, and soon met Monsieur Forestier, who introduced us to the jurors, among them the English representatives.

The judging commenced very promptly, and each juror was handed a printed list of all the roses to be judged, this list giving the names of the roses, the parentage, the class, and the introducer. One list was for the roses of 1920–21, with the scores of 1920 marked up against them; another list was for the roses of 1921–22. This is a very excellent way of judging all new roses, not only because it gives them two years' scoring, but shows them in comparison with the previous year.

English jurors, including myself, seemed a little more conservative in the giving of points than the French, and oftentimes a vote was necessary to decide. Ten points were the maximum given, and only two roses of 1920–21 scored that number of points. The highest scored by any of the 1921–22 roses was 8 points; others ranged from 3 to 7 points. A number of them were not in extra-good shape, and were put down as *reserve;* next year they may show up in much better shape.

Each class was judged separately—first, the 1920–21, and then the 1921–22. To some of us the judging seemed to be, in some instances, rather hurriedly done, although, taken as a whole, we believe each rose was given what it should receive.

The rose that stood out in the Gardens head and shoulders above any other rose was a bed of Pernet-Ducher's Hybrid Tea Gold Medal rose of last year, Souvenir de Claudius Pernet, named in honor of his son, whom he lost in the war. This is certainly a wonderful rose. It is a rich canary-yellow, fading out as it gets older to a lighter shade. The large, full, long, well-shaped bud was as large as any Hybrid Tea rose in the garden, and the flowers were borne on fair length stems, well-foliaged, holding their heads perfectly erect. It certainly was a joy to see this bed of wonderful roses.

The rose that captured the Foreign Gold Medal this year was Howard & Smith's Hybrid Tea rose, No. 252, later named Miss Lolita Armour, while Pernet-Ducher's Souvenir de Georges Pernet took the French Gold Medal. Miss Lolita Armour is a pronounced Indian yellow color, though the outer petals fade out some. It is a good-sized rose, full, very double, the shape when more than half open being not quite as pleasing as when in bud or full open. The plant is a good grower, with fine foliage.

Pernet-Ducher's Hybrid Tea rose, Souvenir de Georges Pernet, named after his second son whom he lost in the war, is a large, well-formed, fairly dark pink. It is a very promising rose and a good, free grower. I do not think it has quite the possibilities as a garden rose as does Souvenir de Claudius Pernet, although it is a very splendid pink rose.

Each year four Certificates are awarded, three for Hybrid Teas and one for a climbing or Polyantha rose. The First Certificate was awarded to Pernet-Ducher's rose, Etoile de Feu, which scored 9½ points. It is very similar in color to Mme. Edouard Herriot. I should think it was an improvement as to growth and size of flower, but not so striking in color.

The Second Certificate was awarded to a Hybrid Tea seedling of Chambard, named Huguette Vincent. It has a dark green foliage, carrying on an erect stalk a big flower, half double, with very large petals of carmine color. The fine qualities of this rose include its strength, the foliage, the rigidness of the stalks, and the striking color of its rich flower. It scored 9 points.

The Third Certificate was awarded to Leenders' Hybrid Tea, Aspirant Marcel Rouyer, one of its parents being Sunburst and the other unknown. This, to my mind, seemed the best rose

of the three that were awarded Certificates. Apparently a free, easy grower, it is very similar in shape to Mrs. Aaron Ward, with flowers much the same color—possibly a shade lighter—a much larger and longer bud.

The Fourth Certificate was not awarded, as there was nothing in either climbers or Polyanthas that seemed to be worthy of it.

The judging took about two hours and we then adjourned to what is used as the coldhouse for palms during the winter, where they had a long table, pencils, pens and paper for each judge. The meeting was organized, officers being elected; M. Cherioux, chief counsel of Paris, president of the third committee of the Conseil Municipal (Avenues and Parks), was elected president. There are two committees for the Conseil Municipal in Paris that take care of the rose competition.

The Rev. Mr. Pemberton, of England, was elected vice-president representing the English, and I, vice-president representing America. The minutes of last year's meeting were read and approved, and then the awards of the Gold Medals and Certificates were made, each award being voted upon separately. Each award was given due deliberation.

Among the jurors were quite a number of Paris officials, among them M. Le Corbellier, who used to be president of the Conseil Municipal of Paris; M. Leullier, president of the police court; M. Deville, president of the fourth committee of the Conseil Municipal; M. Autrand, president of the Department of the Seine; M. Aucoc, syndicus of the Conseil Municipal of Paris; M. Malherbe, general director for the work in Paris; M. Garnier, Administrative Director of Architecture and Avenues; M. Bois, professor of the Museum of Natural History.

Among the prominent men of the trade were: René Barbier, Cochet, Auguste Nonin, Pernet-Ducher, Alexander Dickson, Alexander Dickson, Jr., Arthur Turner, W. E. Wallace, Henri Gravereaux, proprietor of La Roseraie de l'Hay, and Charles E. Pearson, editor of the English *Horticultural Advertiser*.

After our council meeting we adjourned to the Chateau de Madrid, where we enjoyed a splendid and well-served luncheon amid delightful surroundings. Mons. Forestier was very much in evidence as really the one who was directing everything. Thus ended a most notable day!

The Test-Gardens in 1921

By A. C. BEAL, Cornell University, Ithaca
Chairman General Test-Garden Committee

EDITOR'S NOTE.—Dr. Beal's report, while incomplete, will serve to establish variety relationships for two diverse climatic locations—Ithaca and Washington. A comparative study of the figures given will show the general floriferousness, and the spring, summer, and fall performances of the varieties noted, thus guiding rose-growers toward a choice of roses for certain places and purposes.

It is believed that 1922 will see the beginning of a period of greater usefulness for the test-gardens. The outlook is good for securing results of great value under the new arrangement proposed for the Arlington gardens, as set forth on page 122 by Mr. Mulford.

THE following reports show the total number of blooms produced, the number of plants grown, and the distribution of the bloom throughout the season. The average number of flowers per plant may be ascertained by dividing the total number of blooms by the number of plants.

There is a great difference in the average number of blooms produced, which is due to characteristics of the variety and to the size and strength of the plant. This record does not attempt to show the quality of the flowers. For example, at Ithaca, Mrs. Andrew Carnegie produced, on an average, twenty-five flowers per plant. In many, if not in most sections this variety fails to open well. However, during the hot, dry weather experienced in 1921 the flowers were the best we have ever grown. Had we not known its previous faults we should have placed it among the best because of its excellent record under the unusual seasonal conditions prevailing in 1921.

Varieties producing a high average are very frequently only valuable as bedding roses. Among these are the singles and semi-doubles.

Reports follow for the Cornell Test-Garden, the National Rose-Test Garden at Arlington (Washington) and the International Rose-Test Garden at Portland, Ore. Reports from the other test-gardens had not been received at the time of closing for the 1922 Annual, February 14, 1922.

It should be noted that the Portland garden, conducted under municipal control as a city enterprise, tests *only new roses* not yet in commerce. Readers of the American Rose

Annual were informed of the plan of this garden in Mayor Baker's article on page 33 of the 1918 Annual, and of its progress along original lines in Mr. Currey's articles in the 1919 Annual (page 26) and the 1920 Annual (page 107). The scale of points and the method of application are designed to give a very complete test to new sorts. The American-bred hardy everblooming climbing rose, Mrs. George C. Thomas, which received three awards at Portland, is shown in color in Plate XIII, facing page 125.

Cornell Rose-Test Garden

HYBRID TEA AND TEA ROSES

Variety	June	July	Aug.	Sept.	Total	Plants Noted
Amalie de Greiff	18	14	26	15	73	3
Augustus Hartmann	8	52	27	15	106	6
Bessie Brown	26	56	42	25	149	6
Cardinal	23	28	48	8	107	4
Cleveland	3	3	4	5	15	1
Dean Hole	21	30	29	10	90	5
Duchess of Albany	3	10				
Duchess of Westminster	11	14	29	11	65	4
Ecarlate	73	87	107	76	343	6
Edith Part	18	36	20	13	87	6
Elizabeth Barnes	3	10	6	0	19	2
Gartendirektor Hartrath	20	56	55	23	154	6
Golden Spray	9	15	7	2	33	2
Grace Molyneux	15	33	28	17	83	4
Harry Kirke	7	39	31	21	98	4
H. D. M. Barton	8	8	6	2	24	2
Hector MacKenzie	10	15	48	9	82	6
H. F. Eilers	18	41	19	16	94	5
Hoosier Beauty	2	8	11	1	22	2
H. V. Machin	7	11	4	5	27	4
Irish Brightness	41	26	15	8	90	2
Killarney	7	27	23	15	72	2
Königin Carola	10	12	27	12	61	6
Kootenay	18	9	15	4	46	2
Laurent Carle	12	13	31	23	79	5
Manual P. Azevedo	30	20	31	13	94	6
Meteor	12	39	22	15	88	4
Milady	8	14	15	4	41	3
Mme. Caroline Testout	12	26	40	15	93	5
Mme. Jules Bouche	17	38	29	13	107	4
Mme. Jules Grolez	34	37	41	24	136	6
Mme. Leon Pain	2	17	10	16	45	3
Mrs. Andrew Carnegie	29	48	41	36	154	6
Mrs. Cornwallis West	25	31	0	0	56	5
Mrs. Theodore Roosevelt	5	14	11	7	37	4
Mrs. Wemyss Quin	8	22	19	3	52	4
Noblesse	10	5	7	1	23	2
Primerose	12	4	14	4	34	2
Souv. de Gustave Prat	15	17	28	25	85	5
Souv. du Pres. Carnot	16	42	26	15	99	5
Sunburst	16	17	31	14	78	3
White Killarney	9	44	46	22	121	6
Willowmere	15	15	27	15	72	5

National Rose-Test Garden, Washington, D. C.

Following are the detailed results of the 1921 tests at the Arlington garden as reported by Mr. Mulford.

HYBRID TEA AND TEA ROSES

Name	First Bloom	Number of blooms per plant						Plants Noted
		June	July	Aug.	Sept.	Oct.	Total	
Alexander Hill Gray, T.	May 20	24	8	12	16	5	65	6
Alsterufer	May 18	44	8	4	3	6	65	5
Apotheker Georg Höfer	May 18	48	5	14	10	2	79	6
Avoca	May 28	20	3			1	24	1
Balduin (Helen Gould)	May 18	39	33	26	14	5	117	3
Beauty of Stapleford	May 20	41	2	27	6	3	79	1
Betty	May 18	12	2	6	3		23	4
Blumenschmidt, T.	May 28	60	4	15	11	29	119	4
British Queen	May 31	5	1	4	3	2	15	3
Champ Weiland	May 26	12	4	2	2	1	21	3
Chateau de Clos Vougeot	May 23	9	3	1	7		20	3
Cherry Ripe	May 20	12	7	6	2	1	28	1
Clara Watson	May 31	3	1		1		5	4
Col. R. S. Williamson	May 20	5	2	5	2	1	15	5
Columbia	May 26	3	1		1		5	4
Cook No. 512	May 20	10	6	3	4	2	25	3
Cook No. 561	May 18	33	37	7	15	5	97	4
Countess Clanwilliam	May 28	6	1	3	4	1	15	2
Countess of Gosford	May 22	18	7	11	6	3	45	5
Defiance	May 20	7	3	7	6	3	26	2
Dorothy Page-Roberts	May 26	6	3	3	3	1	16	5
Dr. Grill, T.	May 28	33	17	17	31	19	117	3
Duchess of Albany	May 20	18	2	2	2	1	25	3
Duchess of Sutherland	May 26	17	4	3	3	3	30	1
Duchess of Westminster	May 23	1	2	2			5	2
Duchesse de Brabant, T.	May 23	19	6	11	6	5	47	5
Ecarlate	May 12	26	24	14	15	20	99	4
Edgar M. Burnett	May 14	16	13	18	13	15	75	1
Edith Part	May 28	16	6	5	3		30	1
Edward Bohane	June 16	7			1		8	1
Elise Heymann, T.	June 3	7	2	1	1	2	13	2
Etoile de France	May 26	4	3	4	1	1	13	2
Etoile de Lyon, T.	June 21	4		1			5	1
Farbenkönigin	May 18	12	5	4	4	2	27	3
Florence Haswell Veitch	May 14	13	15	4	2	5	39	1
Florence Pemberton	May 23	2	4	4	8	2	20	1
Francis C. Seton	May 24	3	1	1	1	3	9	2
Frances E. Willard (Marie Guillot), T.	May 23	6	5	1	32	4	48	3
Freiherr von Marschall, T.	May 20	22	5	10	21		58	3
General MacArthur	May 23	7	4	2	2	4	19	2
General Superior A. Janssen	May 23	27	12	19	12	4	74	3
Gorgeous	May 23	6	2	1	2	1	12	4
Grace Darling	May 18	6	3	3	2	1	15	4
Grace Molyneux	May 20	21	3	9	9	4	46	6
Grossherzog Friedrich	May 18	31	16	11	11	4	73	3
Gruss an Teplitz	May 20	65	23	9	20	7	124	6
Gloire Lyonnaise	May 17	24	1	4			29	3
Gustav Grünerwald	May 14	13	18	10	7	8	56	6
Hadley	May 20	3	1	1			5	5
H. F. Eilers	May 26	9	2	2	5	1	19	3
Hon. Ina Bingham	May 20	8	1	1	6		16	2
Indiana	May 20	32	30	27	8	15	112	1
Irish Fireflame	June 4	1	2	5	3	1	12	3
Isabella Sprunt, T.	May 23	40	7	21	23	6	97	6
Kaiserin Auguste Victoria	May 23	11	2	4	3	2	22	6

Hybrid Tea and Tea Roses, continued

Name	First Bloom	Number of blooms per plant						Plants Noted
		June	July	Aug.	Sept.	Oct.	Total	
Killarney	May 24	17	10	7	3	4	41	5
Killarney Queen	May 23	11	8	4	3		26	6
Killarney, White	May 23	26	1	4	3	3	37	4
Königin Carola	May 23	13	9	1	10	1	34	2
La France	May 23	16	8	3	8	4	39	3
La France, Striped (Mme. Angelique Veysset)	May 31	21	20	10	7	3	61	3
La France, White (Augustine Guinoisseau)	May 20	18	6	4	7	2	37	6
La Tosca	May 20	45	19	14	9	10	97	3
Lady Alice Stanley	May 23	7	3	7	6	1	24	6
Lady Ashtown	May 14	24	9	9	5	3	50	5
Lady Hillingdon, T.	May 31	10	4	6	4	3	27	3
Lady Ursula	May 23	37	1	11	14	5	68	5
Lady Wenlock	May 23	7	15	15	7	6	50	2
Laurent Carle	May 18	7	8	7	7	1	30	3
Lieutenant Chauré	May 20	23	48	14	8	2	95	3
Louise Lilia	May 26	15	2	7	3	1	28	2
Lucien Chauré	May 23	19	5	2	5	4	35	4
Marie Van Houtte, T.	May 28	19	6	16	7	4	52	3
Marquise de Ganay	May 23	12	6	4	3	2	27	6
Marquise de Querhoent, T.	June 4	10	9	5	1		25	1
Mary, Countess of Ilchester	June 20	5	10	5	5		25	3
Miss Cynthia Forde	May 23	14	10	5	4	1	34	3
Miss Genevieve Clark	May 18	134	42	37	19	25	257	5
Maman Cochet, T.	May 26	9	1	4	6	1	21	4
Maman Cochet, White, T.	May 31	8	2	5	3	3	21	5
Marcia Coolidge	May 23	3	2	5	2	1	13	2
Marie Lambert, T.	May 23	22	17	18	14	1		
Mlle Franziska Kruger, T.	May 28	46	2	14	10	15	87	3
Mme. Butterfly	May 26	8	2	2	3	1	16	5
Mme. Camille, T.	May 28	13	7	8	9	3	40	6
Mme. Caroline Testout	May 18	12	10	4	4	3	33	5
Mme. Berthe Fontaine	May 26	60	2	18	13	2	95	3
Mme. Hector Leuillot	May 20	4	4	9	10	1	28	5
Mme. Henri Fontaine	May 20	17	2	8	6	5	38	1
Mme. Jean Dupuy, T.	May 23	12	5	10	4	3	34	3
Mme. Joseph Schwartz, T.	May 20	30	2	15	24	5	76	3
Mme. Jules Bouché	June 16	5	6	4	4	2	21	1
Mme. Jules Gravereaux, Cl. T.	May 23	7	16	20	13	7	63	5
Mme. Jules Grolez	May 18	13	5	5	5	5	33	5
Mme. Lambard, T.	May 23	28	7	19	6	8	68	4
Mme. Leon Pain	May 23	32	6	6	4	3	51	2
Mme. Maurice de Luze	May 20	18	7	8	4	4	41	3
Mme. Paul Euler	May 26	5	2	3	2		12	4
Mme. Segond Weber	May 18	13	4	7	4	4	32	3
Mme. Theodore Delacourt	May 28	4	3	1	1		9	5
Mrs. Aaron Ward	May 23	10	7	5	5	4	31	5
Mrs. A. Glen Kidston	June 2	5		2			7	1
Mrs. Archie Gray	May 18	8	4	5	4	1	22	2
Mrs. Arthur Robert Waddell	May 20	11	6	9	8	9	43	4
Mrs. Bertram J. Walker	May 26	3	1	1	2	1	8	1
Mrs. B. R. Cant, T.	May 23	22	11	23	17	7	80	2
Mrs. B. T. Galloway	May 28	5	2	2	2	2	13	5
Mrs. Brook E. Lee	June 8	1	2	1	2		6	1
Mrs. E. Alford	June 8	1	3	2			6	1
Mrs. Franklin Dennison	June 4	4		4	1		9	1
Mrs. George Gordon	May 20	31	15	14	11	6	77	3
Mrs. G. W. Kershaw	June 4	3	1				4	1
Mrs. Herbert Hawksworth, T.	May 28	10		2	3	1	16	2
Mrs. Herbert Stevens, T.	May 23	25	9	19	14	15	82	3
Mrs. Hubert Taylor, T.	May 23	6	3	10	4	4	27	1

Hybrid Tea and Tea Roses, continued

Name	First Bloom	Number of blooms per plant						Plants Noted
		June	July	Aug.	Sept.	Oct.	Total	
Mrs. Sam Ross	May 31	1	2	1	3		7	1
Mrs. T. Hillas	May 23	13	3	5	4	2	27	2
Mrs. W. A. Taylor	June 4	4	1	1	3	2	11	4
Mrs. W. Christie-Miller	May 18	12	10	7	11	1	41	6
My Maryland	May 25	10	9	6	6	2	33	2
National Emblem	June 7	3	1		2		6	1
Norma	May 23	23	7	5	5		40	3
Ophelia	May 23	36	3	7	6	4	56	6
Papa Gontier, T.	May 18	15	2	11	5	2	35	4
Perle von Godesberg	May 23	4	1	1	1		7	3
Pharisäer	May 26	12	7	7	7	1	34	2
Premier	May 26	5	1				6	4
Prima Donna (Mme. Paul Euler)	May 20	4	1	1	1		7	4
Primerose	May 30	1	1	3			5	1
Prince de Bulgarie	May 23	11	2	5	5	2	25	4
Prince Engelbert Charles d'Arenberg.	May 26	7	1	1	2		11	4
Princess Bonnie, T.	May 26	6	4	4	2		16	1
Radiance	May 18	20	15	38	9	11	93	3
Red-Letter Day	May 18	21	9	13	11	5	59	3
Red Radiance	May 18	20	15	7	4	8	54	6
Reine Marguerite d'Italie	May 18	43	21	15	6	5	90	3
Richmond	May 26	13	2	2	2	2	21	3
Safrano, T.	May 26	4	1				5	2
Senateur Mascurand	May 23	4	3	6	4	1	18	3
September Morn	May 20	5	1				6	1
Simplicity	May 23	11	5	8	7	2	33	4
Souv. de Gustave Prat	May 18	8	4	7	6	3	28	5
Souv. of Wootton	May 23	7	5	6	1	1	20	2
Sunburst	June 4	1	1	1		1	4	2
Virginia R. Coxe (Gruss an Teplitz)	May 14	42	15	6	9	4	76	4
W. C. Gaunt	June 3	5	8	4	1	1	19	2
W. E. Lippiatt	May 20	12			1		13	3
Wellesley	May 20	19	1	8	5	1	34	5
Wm. Notting	May 20	6	1	3	1	1	12	2
William R. Smith, T.	May 28	6	1	3	3	2	15	4
William Saunders	May 26	8	2	2	4	2	18	6
Winter Gem, T.	June 4	11	10	10	17	3	51	2

HYBRID PERPETUAL ROSES

Name	First Bloom	Number of blooms per plant						Plants Noted
		June	July	Aug.	Sept.	Oct.	Total	
Alfred Colomb	May 20	25	10	3	10	2	50	3
American Beauty	May 17	7	4	2	3		16	3
Anthony Waterer	May 8	8			1		9	3
Baron de Bonstetten	May 10	19	1				20	3
Baroness Rothschild (Baronne Adolphe de Rothschild)	May 17	49	13	15	6	1	84	3
Black Prince	May 28	20	10	2	3	2	37	3
Captain Christy	May 20	11	7	2	10	1	31	3
Captain Hayward	May 17	11	2	1	2	1	17	2
Clio	May 20	44		2	4		50	3
Countess of Rosebery	June 3	147	9	14	23		193	1
Duke of Edinburgh	May 17	16	21			1	38	3
Earl of Dufferin	May 17	16	17	1	1		35	3
Eugene Furst	May 21	67	15	5	4	6	97	3

HYBRID PERPETUAL ROSES, continued

NAME	First Bloom	Number of blooms per plant						Plants Noted
		June	July	Aug.	Sept.	Oct.	Total	
Fisher Holmes	May 8	7					7	3
Francois Levet	May 23	29	3	5	3		40	3
Frau Karl Druschki	May 20	92	94	17	18	1	222	3
General Jacqueminot	May 10	38	12	3	4	2	59	3
General Washington	May 17	36	11	17	15	2	81	3
George Arends	May 23	13	9	6	8		36	3
George Dickson	May 17	7	1				8	3
Gloire de Chédane-Guinoisseau	May 23	10			1		11	2
Grandesse Royale, Prov.	May 17	49	3	2	4	3	61	3
Her Majesty	May 31	1			1		2	2
Hugh Dickson	May 17	14	6		3		23	3
J. B. Clark	May 17	17	3	1	3	1	25	3
John Hopper	May 10	26	12	8	5	1	52	3
John Keynes	May 23	63	1		1		65	3
Jubilee	May 17	40	1	1	1		43	3
Jules Margottin	May 17	17	5	5	4	2	33	3
Mabel Morrison	May 17	30	9	10	8	1	58	3
Magna Charta	May 23	43		2			45	3
Maharajah	May 17	16	6	2	3		27	3
Mme. Bertha Fontaine	May 26	60	2	18	13	2	95	3
Mme. Charles Wood	June 23	3	2				5	3
Mme. Gabriel Luizet	May 27	15	1				16	2
Mme. Masson	May 20	8	4	6	2	1	21	3
Mme. Victor Verdier	May 20	9	4	1	1		15	3
Marchioness of Dufferin	May 28	8			1		9	2
Marchioness of Londonderry	May 26	4		2	1		7	3
Marchioness of Lorne	May 23	6	2		1		9	3
Margaret Dickson	May 23	16		4	6	1	27	3
Marie Baumann	May 23	24	8	1	5	1	39	2
Marshall P. Wilder	May 10	24	2	1	1		28	3
Mrs. John Laing	May 23	11	9	6	7	4	37	3
Mrs. R. G. Sharman-Crawford	May 20	17	12	15	26	3	73	3
Oakmont	May 14	132	1	7	9	1	150	3
Paul Neyron	May 23	19	10	6	7	1	43	3
Pierre Notting	May 10	6	1				7	3
Pius IX (Pie IX)	May 17	50	29	20	10	4	113	3
President Lincoln	May 17	2	6				8	3
Tom Wood	May 20	17	4	5	9	1	36	3
Ulrich Brunner	May 17	28	12	4	8	2	54	3
Victor Verdier	May 27	60	2	10	3	2	77	3

The Future of the National Rose-Test Garden

By F. L. MULFORD, Department of Agriculture

After considering well the work that has been accomplished by the test-garden, the attitude of rose-growers and the general public toward it, the funds available for the work, together with the expectation of the establishment of a rose show garden on the city side of the river, some radical changes in the handling of the test-garden have been determined upon.

If the garden is to serve the purpose for which it was established, the most important results that can be obtained from it

are such as can be spread broadcast in printed form. The number of people that can be thus reached is far greater than the number that can get to the garden, and those at a distance are equally entitled to the benefits that it may bestow.

With this thought as a background, it has been determined to sacrifice any of the features of the garden that have been added to make it more attractive, if, by so doing, the investigational work may be made more accurate, or can be more economically handled. Further, it has been determined that trials of a variety shall cease at the end of five years unless by that time there seems to be some reason to the contrary. Some varieties which are typical or which have special characters desirable in comparison, will be kept. There will be the smallest practical number of these index varieties in each group. Readings will be made on these each season as a basis of comparison.

The first step taken on the new plan has been the transplanting to the lawns of Arlington Farm of plants of the various rose species represented either in the test-garden or at Bell Station. The place selected is at the northwest corner of the lawn area, where the different plants are scattered about in the open lawn or in the lee of evergreen trees for protection, each having at least twelve feet in which to spread. Thus each specimen will have a chance to develop without interference. A duplicate set of the varieties will be grown on the lighter soil of the farm at Bell Station.

The next change under way at this time is in connection with Tea and Hybrid Tea roses. In the past some of these roses have been supplied on their own roots and some on various stocks; they have been planted side by side, records of their behavior have been taken, and it has been called a variety test. An example of similar conditions would be if a test should be instituted with La Tosca on *R. rugosa* roots; Radiance on Manetti; Columbia on *R. multiflora japonica*, and La France on its own roots. Such a comparison shows nothing of the value of the variety. In these so-called tests it has not even been pretended that the root or stock upon which the variety has been growing is the one on which it does the best.

In order to make the readings on the different varieties comparable, it is now proposed to propagate each variety on its

own roots and on three stocks, providing six plants of each, and planting them in parallel rows. The stocks selected are Manetti, *R. multiflora japonica*, and *R. odorata*, two of them being now largely used commercially in this country and the third being a promising new stock.

Paralleling this new arrangement of the variety tests, investigations are being started on the value of different rose-stocks by L. B. Scott and Guy E. Yerkes, in connection with their investigations on nursery stocks. The plan for the first year proposes to use as stocks Manetti, *R. canina*, Mme. Plantier, Seven Sisters, Wax Rose, Ragged Robin, *R. cinnamomea*, *R. setigera*, *R. rugosa*, *R. multiflora cathayensis*, *R. Soulieana*, *R. multiflora polyantha* (a vigorous type of *R. multiflora*), and some hybrids produced by the late Dr. Van Fleet, of *R. setigera* × *R. Wichuraiana*, and *R. Jackii* × *R. Wichuraiana*.

Because of the impracticability of propagating sufficient stocks, but one variety will be used the first year. Fifty plants of this variety will be planted on each stock in the heavy soil in the National Rose-Test Garden at Arlington, and the same number in the lighter soil at Bell Station.

The first variety to be thus tested will be Columbia. The following list has been selected for the continuance of the test: Paul Neyron, Frau Karl Druschki, Ulrich Brunner, Mrs. Aaron Ward, Radiance, Los Angeles, Ophelia, General MacArthur, Gruss an Teplitz, Lady Alice Stanley, Duchess of Wellington, Mme. Abel Chatenay, Mme. Caroline Testout, Kaiserin Auguste Victoria, White Killarney, White Maman Cochet.

The west half of the test-garden will be used for the initial plantings, which will not be ready until the fall of 1922. In the meantime, the present roses under test will be removed in order to give opportunity for soil-improvement during the coming summer. This new use will require the removal of all walks between the plots in this half of the garden, except the middle one, and also the removal of the rose trellises at the north end with the exception of the outside fence.

It is expected that final observations will be made on a number of varieties in the garden during the coming season, so that they may be discarded and replaced by newer sorts.

Plate XIII. New American Hardy Everblooming Climbing Rose, Mrs. George C. Thomas

Originated by Capt. George C. Thomas, Jr.; awarded three distinct honors in the 1921 trials at the Portland (Oregon) International Rose-Test Garden, as follows: Gold Medal for the best rose for general garden cultivation; Gold Medal for the best climber; also Special Award for the best rose produced by an amateur. (Reprinted from the 1920 Annual, where it was shown as "66 H, 1916.") See page 125.

Rose-Tests and Rose Progress at Portland

By JESSE A. CURREY, Portland, Ore.

EDITOR'S NOTE.—It is difficult for the rose-lovers of the East to realize the importance of their favorite flower to many communities in the favored Pacific Northwest. A municipally maintained rose-test garden, a rose festival which possesses entirely a great city, and now a plan to "introduce rose-growing into the public schools"—these propositions sound like fairy tales! Yet our energetic associate, Mr. Currey, whose writings have been a feature in each of the six Rose Annuals preceding this one, tells us the sober facts and makes us all sorry the Portland trip has had to be postponed until 1923.

ASIDE from the usual number of rose shows in Portland, Seattle, Tacoma, Bellingham, Salem, Oregon City, and smaller cities, the rose progress of the Pacific Northwest has been marked during the past year by increased activity in all lines of rose-culture in Portland. Possibly the most important feature has been the steps taken to introduce rose-growing into the public schools of the city, and it is expected within the next two years to have a rose-garden in connection with each school and a certain class will look after its care. This is to be accomplished under the re-organization plans of the Portland Rose Society. This Society has been in existence more than thirty years, and this year it has been strengthened.

In the annual test of new roses in the International Rose-Test Gardens, conducted by the Bureau of Parks at Portland, Ore., the seedling rose of Capt. George C. Thomas, Jr., known as No. 66 H, 1916, now named "Mrs. George C. Thomas," in honor of his mother, and which was illustrated as the frontispiece in the 1920 American Rose Annual and is reprinted in this Annual as Plate XIII, facing this page, won the highest honors. Under the awards it will receive the Gold Medal of the American Rose Society, the Gold Medal of the city of Portland for the best climbing rose, and the Silver Trophy of the Portland Rose Society for the best rose produced by an amateur.

Second honor went to Imperial Potentate, the new rose produced two years ago by Clarke Bros., of Portland, Ore. It will receive the Silver Medal of the American Rose Society, the Gold Medal of the city of Portland for the best bush rose, and

the Silver Trophy of the Portland Chamber of Commerce for the best rose produced on the Pacific Coast. Other roses by these two growers secured the next highest scores in the test, but under the rules of the garden, only one prize each year can be awarded to the same grower, no matter how many roses he has entered.

The tests in 1921 were limited largely to new productions by Captain Thomas and Mr. Clarke, for the roses received by the garden since the war were not sufficiently well established this year, in the opinion of the judges to be fairly scored. They will be marked next year, and among these will be quite a number from England, including Adonis, Macbeth, Ariel, Puck, four unnamed seedlings from Elisha J. Hicks, two new ones from Walter Easlea, and several from other growers of the British Isles; also Rotarian, Angelus, and Miss Amelia Gude from Fred H. Lemon & Co., three unnamed seedlings from E. G. Hill Company, an unnamed climber from Thomas N. Cook, of Boston, Red Columbia from Jos. H. Hill Company, three new roses from Jackson & Perkins, several from Hazelwood Bros., of Australia, and three new seedlings from Howard & Smith, of Los Angeles. Therefore, with this great number of new roses, the results in 1922 will make interesting comparative study.

In the scoring this year, Pink Beauty, originated by John Cook, of Baltimore, came within one point of the qualifying score for outdoor roses under the Portland system. In commenting on this rose, the judges stated that possibly in a section where there are warmer summer nights than in Portland this rose would prove satisfactory for outdoor growing, but all of them united in saying that it presented great possibilities for indoor culture. Charles E. F. Gersdorff's climber, Mrs. Charles Gersdorff, qualified with a score of more than 87 points. It should be noted that the scoring method in use at Portland is most thorough and detailed.

The judges in the Portland Test for 1921 were Rev. S. S. Sulliger of Kent, Wash., C. H. Collier, president of the Seattle Rose Society, and J. B. Pilkington, one of the largest commercial growers in Portland.

The detailed scores for the various roses follow:

Maximum Number of Points	Individual Quality	Name of Grower and Rose Tested															
		Clarke Bros.' Seedling No. 20	Clarke Bros.' Edwin Markham	Clarke Bros.' Imperial Potentate	Clarke Bros.' Seedling No. 8	Clarke Bros. Seedling No. 100	Clarke Bros.' Seedling A	Clarke Bros.' Seedling No. 25	John Cook's Pink Beauty	Geo. C. Thomas, Jr. Seedling 101–16	Geo. C. Thomas, Jr. Seedling 66H–16 Mrs. Geo. C. Thomas	Geo. C. Thomas, Jr. Seedling No. 43–15	Geo. C. Thomas, Jr. Seedling No. 7–14	Geo. C. Thomas, Jr. Seedling No. 100–16	Geo. C. Thomas, Jr. Seedling No. 98C–16	Geo. C. Thomas, Jr. Seedling No. 45–16	C. E. F. Gersdorff's Mrs. Charles Gersdorff
5	Novelty	2.66	3.66	3.66	3.33	2.66	2.33	2.33	2.66	4.66	5.	3.66	4.	4.66	5.	3.66	3.66
10	Color	7.67	9.33	9.33	8.34	7.	7.67	5.34	7.	9.34	9.34	9.	9.	9.34	9.66	10.	9.
5	Fragrance	2.66	3.67	4.33	4.67	3.	3.33	3.	4.67	3.	4.	4.34	4.	3.33	3.66	4.34	4.66
10	Lasting	6.	9.	9.66	7.	6.34	6.67	6.	7.	9.33	9.66	10.	5.66	9.	10.	9.34	9.67
10	Shape	6.67	8.66	9.	7.33	6.66	7.66	7.33	9.	9.33	9.66	9.	7.67	8.67	9.34	9.66	8.67
5	Substance	4.	5.	5.	3.	4.34	3.34	3.34	3.66	5.	5.	4.33	4.	4.66	4.34	4.33	5.
5	Petalage	4.66	5.	3.67	5.	4.67	4.	4.67	5.	4.	4.67	4.67	3.	4.	5.	4.	5.
5	Size	4.	4.34	4.34	3.34	4.34	4.33	3.66	4.34	4.67	4.33	4.	4.67	3.34	5.	4.	4.66
15	Blooming	15.	12.	14.67	15.	14.	14.67	15.	15.	14.66	15.	15.	9.	15.	15.	15.	13.67
10	Hardiness	10.	10.	10.	10.	9.	10.	10.	9.66	9.66	9.66	10.	9.	10.	10.	9.34	10.
10	Foliage	6.67	9.66	9.66	9.33	5.33	8.	8.67	7.	9.	8.	8.66	7.33	7.67	7.	8.	6.34
5	Growth	4.33	5.	5.	3.	3.33	4.33	4.66	4.33	4.67	5.	5.	4.34	4.66	4.66	4.67	3.67
5	Stem	5.	5.	5.	3.67	4.67	4.34	4.67	4.67	5.	5.	4.67	4.33	4.67	4.	4.66	3.66
100	Total	79.33	90.33	93.33	83.	75.33	80.66	78.66	84.	92.33	94.33	92.33	76.	90.	92.66	91.	87.66

By a survey it has been ascertained there are more than 22,000 rose-gardens in the city of Portland, and the officers of the Society believe that 5,000 of these rose-growers can be enrolled into a local society, with affiliations with the American Rose Society, or at least that a large number of them can. The officers have set the mark at 5,000 members, and all the forces of the various organizations composing the Rose Festival Auxiliary will be enlisted in making a city-wide campaign to secure them. We ought to have easily the strongest local rose society in the world.

Another mark of progress was the establishment of the three-mile Roseway leading to the famous Columbia River Highway. The main artery from Portland to the great scenic drive has for years been known as Sandy Road, and for about three miles it passes through one of the modern residence sections of Portland. Under a plan fostered by the Portland Ad Club, and directed by a committee headed by H. H. Haynes, this section of the road is to be turned into a rose-bower. On each side of the street, between the sidewalk and the curb, will be planted Mme. Caroline Testout roses, which grow with especial vigor in Portland. The entire stretch of three miles has been divided into sections, and each section assigned to some civic organization like the Rotary Club, the Kiwanis Club, the Progressive Business Men's Club, the East Side Club, and the like, and each one of these clubs has contributed to a fund which will be devoted to paying the men who will be employed to care for the roses and see they are properly pruned and cultivated, thus insuring good attention to this three-mile stretch. In addition to the roses in the parking all the telephone poles will be draped with climbing roses, and it is expected that in two years this roseway will be a notable feature of Portland.

As an evidence of the greater awakening to rose-culture in Portland, a magazine, known as *Portland Roses*, has been established during the past year and is issued quarterly under the auspices of the Portland Rose Society, each member of which is automatically constituted a subscriber in connection with his membership. The magazine is unique, and is probably the only monthly or quarterly publication of its kind devoted exclusively to rose-culture.

E. G. Hill's Lifetime with Roses

AN EDITORIAL REPORT

READERS of the 1921 Annual will remember Mr. Hill's delightful paper "English Roses through American Eyes," and they will also remember the genial face of that fine man as reproduced near the article. On December 6, 1921, Mr. Hill talked to the Philadelphia Florists' Club of his lifetime's rose observation and work. From his delightful address some extracts are here presented:

I have found in my travels that the men who love roses and grow roses are the finest men in the world. My association with these men has been fraught with many blessings to me. For example, Dr. Edmund M. Mills, of Syracuse, surely loves the rose, and I may tell you a story to indicate how rose-love breaks down the difference between Methodism and Catholicism.

Dr. Mills lives in Syracuse, where he has charge, as district superintendent, of a number of churches in the vicinity. Our friend Quinlan, of Syracuse, is not only a good Catholic but a good rose-grower. Notwithstanding the former he went to hear Dr. Mills preach, and liking what he heard he kept on going to hear him every Sunday evening. One of his friends who observed this action intimated that he was entirely too attentive to the Methodist church. Mr. Quinlan's reply was: "Well, anybody who loves roses like Dr. Mills can't harm me and I expect to continue to go to hear him."

I like to work with flowers and plants, and study them. Really few people know, and a great many of the florists do not understand, that the sexual relation exists in plants just the same as in the animal kingdom. When we keep that thing in mind, and remember it is God's plan and purpose to benefit the world, to make things more beautiful, we can work with Him.

I despise the man who says he creates anything. I tell you, God alone creates the flowers and beautiful things in life; but we can be co-workers with Him in the fertilization, in the production of new plants and new flowers.

In the sixteenth chapter of Proverbs we read, "Jehovah hath made everything for its own end." And how true that is; the man that dares to believe that he creates anything without the Divine assistance is a man on unsafe ground and he is not right in his thought and mind. In Westminster Abbey, last year, I noticed two tablets not more than ten feet apart. One was to Charles Darwin, the revelator of God's laws concerning plants and animals in the material world; the other was to John Wesley, the interpreter of the spiritual life as revealed by God through Jesus Christ. I thought how broad a platform that is and how sincerely the thought should be that the same God, the same Jehovah who made man and created him after his own image, also made the plants and the fishes, the fowls, the birds and the animals.

To be a successful hybridist, or to attain success in fertilization, we have to have idealism, we must have vision of the thing we want to aim at. Young men must get this thoroughly grounded into their minds and into their thoughts. Dream! Dreams! some may say. If it were not for the dreamers there would not be much accomplished in this world. Have a vision of the things you want to do, and then have the purpose of mind, the stability to stick at it and work it out and you will get results.

When you come to the men who have accomplished something in the rose line, you have Pernet. Just think what he did! He took the Persian Yellow and the Austrian Copper and worked for fifteen to twenty years trying to introduce a pure yellow trend in the everblooming roses. What is the result? His effort has been crowned with success; the greatest advance that has been made in the rose family in the last twenty-five years is in the variety that he has named for his son, Souvenir de Claudius Pernet. It is one of the most wonderful roses I have ever beheld. It is not only of good size, but the coloring is simply superb—a clear, shining, golden yellow. It has health, vigor, and all the characteristics that are necessary for an excellent garden rose.

I think we all owe a debt of gratitude to Mr. Montgomery; he has done great things for the rose. And then John Cook—just see what he has done. He has given us a lot of most excellent roses. Dr. Van Fleet's climbers are the best in the world. There is Mr. Walsh; he has given us fine climbers.

I cannot forget that going down the Thames River, in looking over the back-yard fences along the railway, I think in five out of every ten back yards there were roses blooming, hanging over the garden fences, Dorothy Perkins, and American Pillar among them. Those two roses are planted in England everywhere and on every hand, a tribute to the American rosarian.

A good many people think, when we send out a new rose and ask the price that we do, that it is exorbitant, and that we are profiteering on the trade; but let me just put the thing to you. From the time I introduced Richmond until I got Columbia, I spent thousands and thousands of dollars in wasted space and in time. The nurserymen do not plunge on a new rose that is valuable for garden purposes. I think, however, a better day is dawning, and that there will be a better appreciation of a good garden rose. When that day comes we will see a revolution in our garden roses. There is lots of blood that needs breeding out, and new blood that should be bred in, before we will get satisfactory varieties that will grow and flower outdoors as they ought, as they do over the water and out upon the Pacific Coast.

Now I am going to reminisce a ittle. I remember in my quest for a new rose, I went over to Luxembourg. I saw a rose there and said to myself, "That rose will force; that is just the finest thing." I put $400 or $500 in it, and it nearly broke me, then! I thought surely I had gotten a jewel, and I tried it out. What was the result? I burnt the rose!

Then there was a fellow down in southern France wrote me that he had a mighty fine rose, a red that he thought would suit the American market and would be desirable for forcing purposes, and as I had never known a man over there to have more than a couple of hundred of a new rose, I, fool-like, sent him a cablegram that I would take "all he had." How many do you suppose I received? I got 9,400! It took some hustling around to dispose of those roses.

I was pretty nearly bankrupt one year when a party, who dealt in hybrids mostly, sent me a list that just captivated me. My wife said, "I think we need things in the house more than we need new roses." But, anyhow, I sent for them, and he sent them C. O. D.!

When I was at Lyons, with M. Pernet, and he was showing me his roses and dilating upon them, I caught sight of a couple of yellow roses that were sticking up, and kept looking at them. Pernet said to me, "What are you looking at?" I said, "I am looking at that yellow rose. Let's go over there, and then we can come back here." But he said, "Come right along; we will get there." We got over there after a while, and I was captivated by that rose. I said to M. Pernet, "I would like to buy that rose." "Well," he said, "what will you give?" I looked them over, and I said, "I will risk $500 on that." "Well," he said, "I will not take that much money for it; I would not feel right

to take $500 for that rose. When we go in to dinner I will make you a price." So when we got to the dinner, and the old gentleman said, "Mr. Hill, if you will give me 1500 francs ($292.50) for that Rose that would be about right." I said, "That is not enough." He said, "Yes, I do not want more." I replied, "I want you to reserve the European rights. I will exploit it in America, and the information will get back to England, and I am sure you will sell a good lot of them." It worked that way, and M. Pernet got more money out of Sunburst over there than I got out of it in the sale over here.

He sent me Mme. Edouard Herriot, the rose that the *Daily Mail* people offered a $500 prize for at the great International Show. He thought it would bring far more money than Sunburst. It would not bloom in the winter.

When you see a rose growing over on the other side, and you try to size it up, in nine cases out of ten, I might say in ninety-nine cases out of one hundred, if you have in view a forcing variety, you are doomed to disappointment, for outside of Catherine Mermet and Mme. Ferdinand Jamin, Killarney, Ophelia, and one or two others, how many of those foreign importations have ever proved amenable to our winter forcing conditions? Our people are critical when it comes to a winter-flowering rose; there are so many essentials that enter into a winter forcing rose, so different from a garden rose. In the first place, it has to be vigorous; it has to be everblooming; it has to have good foliage, a good stem; it should have color and fragrance, and good petalage.

I buy everything they offer over there; they think I am an "easy mark," I guess, but that's all right; I may drop on to something as good as Ophelia. Charles H. Totty and I went over there to see Mr. Paul, and I said to him, "How many have you got of that?" "Well," he said, "I have sold a good many of it." I asked, "How many can you let me have?" He said, "Well, I am not going to let you have all I have. I have to keep some for my own trade." I said, "How many? Let's get down to business." He said, "About 300." I was the happiest fellow in the world when I got those 300 over; but somebody put Mr. Eisele on it, and the Dreers had it in their catalogues, so I had to put Ophelia on the market a year too soon. However, I have no cause to complain, because Ophelia has been the mother of nearly all the good roses I have raised.

Do you know that the first rose I got that gave me any encouragement was General MacArthur? Let me tell you about General MacArthur. I was over in some London gardens last year, and the man who had charge of the roses—they have beds of roses, with twenty-five to fifty and sometimes 100 varieties in a bed—was commenting on the merits of the different varieties. He came to a red rose and said, "I think this is the best red rose we have over here. If you haven't got this rose you ought to get it." I asked him, "What's the name?" (I had recognized it at once.) He said, "General MacArthur," and I said, "Rather an old friend; I originated that rose." He replied, "You did!"

I met a man from South Africa at a flower show in London. I think he was one of those diamond merchants. He was looking around the show and somebody told him that Mr. Hill was there from America. He said, "I want to see that man," and so he was brought over and introduced to me. "Mr. Hill," he said, "I want to shake your hand and thank you." I asked him, "What for?" He said, "I am from South Africa, and do you know the finest rose we have in South Africa is your General MacArthur? It grows with exuberance and there is a charm about it." I felt that was a compensation for some failures!

To the inquiry which has been made about how to go about rose-breeding, I am glad to reply. Of course, with the rose the two sexes are in one flower. There are some varieties that are sterile; they cannot be fertilized. When we want to use a variety for the mother plant, we take a small scissors and cut out the pollen-bearing stamens of a flower and let it stand until the

pistil or stigma is ready. I could not tell anybody just when to apply the pollen, or when conception would take place in the rose. It comes only by actual experience; I can tell in most cases when the organs of the plant are in a receptive mood, and I can tell when it has been fertilized and impregnated. We will begin to cross-fertilize in a very short time, and it will take until next August or September before the seed properly ripens. In the meantime you have got to keep your plants in fairly good health—not too moist. Sometimes moist atmosphere, a continuous rainy season for some weeks, will cause your rose seed-pod to blacken in spite of all you can do.

We have no secrets. I know some of the European people have pretended to have great secrets, but there is not anything to this secret business.

We sow the seed along in October and do not let it kick around and dry up and get hard. Put it in a cool place and then exercise patience; as St. Paul says, "Let patience have her perfect work." You will find out what the apostle meant when you get into sowing seedling roses.

Our new rose, America, comes from American Beauty and Premier; that is its real parentage, and if you will look at the wood it resembles American Beauty, except that it will produce a dozen flowers where American Beauty will produce one. I think it gets its long growth from American Beauty. It is between Columbia and Ophelia in color. See Plate XVII, facing page 153.

There are strange things in nature. You never can tell what you are going to get. Take in the human family—you do not get a Gladstone or a Lincoln or a Roosevelt, or even a Harding or Woodrow Wilson only once in a good long while.

Of course, sports have contributed to the rose family; they have given us many desirable varieties. Bride and Bridesmaid and White Killarney and the two or three other Killarneys are sports of that nature. It is a strange law governing the production of valuable things. Nearly every variety of rose that has been forced has produced a climbing sport. We had, last year, a sport of Columbia that ran up eight to ten feet. Who can explain that? What is the law that governs those sports? The plantsman and the scientist cannot explain it. I have never heard any explanation that is satisfactory.

I think it is Jehovah's purpose and plan to supplement or to make good our ignorance and our overlooking these facts concerning His laws in plant production. I believe if the orchardist had been on to his job right, we would have had finer apples than we have through this same law that has brought these sports in our plants.

Naming a rose is a great thing, and it is beset with difficulties. I think I have had a hundred applications to name America for some dear lady or some nice young miss, but I do not have any authority at Richmond. My sister runs the naming of the roses, and she gets away from Miss this and Miss that and gives them suggestive and good names, so she picked out Premier and Butterfly and Richmond and America.

I do not know that I can say anything more, except that in connection with the seedling roses, great grandmothers and great grandfathers away back have an influence on all seeds, and that a seedling rose will reassert the character of a past generation or parentage. Now America, as I have said, is the result of crossing American Beauty with Premier. I wish that I could transport you to our houses and you could see America grow. Let me tell you something: We had only sixteen plants of America a year ago at this time, and now we have 4,500, I believe. You will say, "Perhaps we weaken the plant by over-propagation." We do nothing of the kind. I took a bunch of Columbia and budded America on the top growth of Columbia; we got a stronger growth from those buds than the original sixteen plants produced. We try to keep strength and vigor and health in a new rose.

Among European Rosarians

By E. A. WHITE
Professor of Floriculture, Cornell University

EDITOR'S NOTE.—To get rose observations at first hand by a competent rosarian is very much worth while. Professor White, who was the efficient secretary of the American Rose Society for several years, and until his increasing duties made continuance impracticable, has provided us with just such observations.

WHEN I planned to visit England, France, Holland, and Belgium in the fall of 1921, I feared it would be too late in the season to see many roses in bloom, but was agreeably surprised, for I found the Teas and Hybrid Teas a mass of bloom in these countries, even as late as November 1.

For years I had hoped sometime to meet these men on the other side of the Atlantic who have influenced the type of our American roses by their work in breeding. It was, therefore, a keen pleasure to get into personal touch with them, and to know something of their personality as well as to see growing in their birthplaces the English roses we love in America.

It will always be a source of satisfaction to have known George Paul. I spent a delightful day with him at Cheshunt, Herts, on September 5. He died suddenly about two weeks later. Although nearly eighty years old, he was, when I saw him, apparently hale and hearty, and he showed a keen interest in everything that pertained to the rose. He welcomed me with cordial hospitality.

The American rosarian always associates the name of Paul & Sons with the introduction of the first Hybrid Tea rose, Cheshunt Hybrid. Mr. Paul retained to the last his keen desire to produce "something better." He was most enthusiastic over two varieties which seem to be particularly promising. These were: The Premier, a climbing hybrid of *Rosa lutescens*, and Paul's Perpetual-flowering Lemon Pillar. The Premier was of an extremely vigorous habit of growth, with enormous rhododendron-like clusters of blush flowers, often twenty-five or thirty flowers in a cluster. The Perpetual-flowering Lemon Pillar produced double flowers of large size. [Plate XIV shows Mr. Paul standing under a cluster of this beautiful rose.—ED.]

At Waltham Cross is the home of Ophelia. It was indeed a

pleasure to see the birthplace of a rose which has become so well known in the United States. I was cordially received by Mr. Arthur Paul of the firm of Wm. Paul & Son, and was shown through the nurseries by Mr. Miller, who has done most of the breeding for the firm. The new varieties which Mr. Miller thought especially good were No. 719, a large-flowered, full-petaled, clear red, with a fine fragrance; Maud, a very free-flowering salmon-pink variety; Florence, a very fragrant silvery pink; and Dinah, velvety dark red.

I attended all the fall exhibitions held in the Royal Horticultural Hall. In each roses were conspicuous. On September 6, dahlias and gladioli were featured, but Rev. J. H. Pemberton had a fine collection of roses. His Callisto, a hybrid Musk rose in golden yellow clusters, was good, but even more striking was Mermaid. Its exceedingly large sulphur-yellow, single flowers were most attractive. Danäe was also good; it has long been a favorite of mine because of its hardiness, perpetual-flowering habit, and clear, yellow color, as grown at Cornell.

The fall exhibition of the National Rose Society was said to be the finest ever held. This was unexpected, for the season in England was an extremely trying one for roses. They suffered severely from the lengthy drought, particularly in southern England. To an American the remarkable display of fall bloom was unexpected. A June exhibit in the United States could not have equaled it. The attendance was also a surprise. Long before the doors opened at 12 o'clock, the entrances and street outside the Royal Horticultural Hall were thronged with people eager to view the roses.

I was asked to be one of the judges of seedling roses, which was an honor bestowed on America, and nothing more. I felt I knew little of existing English varieties of roses, and the best thing I could do under the circumstances was not to express an opinion, but to listen and learn all I could from the experts familiar with English varieties. I was glad I made this decision when later the Honorable Secretary told me he thought "the judges did a mighty poor job," but that I was not to blame, for I "wasn't expected to know better!"

The largest exhibit of seedling roses was made by Messrs. McGredy & Sons, Portadown, Ireland, and a gold medal was

awarded the firm for a clear yellow variety, Mabel Morse. It was the general opinion, however, and agreed to by Mr. McGredy, that the medal should have been awarded to another yellow variety shown by the same firm—Florence M. Izzard. This variety, however, was given an award of merit.*

It was indeed a pleasure for me to meet the men and women of Britain actively interested in rose-growing, whose names are so well known in the United States: E. J. Holland, president of the National Rose Society; the Hon. S. A. R. Preston-Hillary, treasurer; Rev. J. H. Pemberton, Rev. Joseph Jacob, H. R. Darlington, Samuel McGredy, Alexander Dickson, Jr., the Cants of Colchester, Walter Easlea, Miss Ellen Willmott, and others. No one could have extended more courtesies to the writer than did the Honorable Secretary, Courtney Page.

A volume might be devoted to the interesting things I saw in the gardens of France. At the Roseraie de l'Hay, near Paris, a maid took my card and soon returned with the head gardener, M. David. As he spoke no English and my French was broken, we spent little time in useless conversation. However, the varieties were all distinctly labeled, and, fortunately, variety and species names do not change in French, so we had a basis of understanding.

The newer varieties were first examined, but, due to the lateness of the season and the unusually dry summer, one could hardly form a fair estimate of the comparative values of varieties. The gardens, however, are interesting and instructive because of their systematic arrangement.

The Museum of Roses is unique: It is a low structure of pleasing architecture, located near the center of the garden. It is filled with beautiful paintings of roses, many of them done in the garden by noted artists. One of the most prominent paintings shows M. Gravereaux among the flowers he loved so well. In the Museum are also many old and valuable prints of roses. One case is filled with specimens of insects destructive to the rose, and another shows the effect of injurious rose diseases. There is also a collection of rose perfumes.

Mr. S. S. Pennock has, I understand, provided a complete account of his visit to the Bagatelle Rose-Garden in June,

*See, also, Mr. Courtney Page's article, page 144.

wherefore further notes are unnecessary. I was surprised to find such an abundance of bloom as was in evidence. M. Forestier was ill, and I was shown through the gardens by M. Cogny, the superintendent.

The ride from Paris to Lyons was through an interesting section of France, for the most part agricultural, and the principal operations then were sowing winter wheat and harvesting sugar beets. Immense quantities of beets are grown.

On my arrival at Lyons, I found a note from M. Pernet-Ducher saying his daughter would call for me early Thursday morning to take me to their nurseries. Mlle. Pernet speaks excellent English, and acted both as guide and interpreter for me during the entire day. The war brought deep sadness to their home in that it took both sons, Claudius, 31 years old, and Georges, aged 28 years. The morning was spent among the roses. Among the newer varieties, Souv. de Mme. Boullet, Souv. de Edmond Gillet, and Etoile de Feu, were all excellent. An Indian-yellow seedling, President Cherioren, was also fine in its coloring and habit of growth. Jean C. N. Forestier, introduced by Pernet-Ducher in 1919, a large-flowered, deep pink variety, was also fine. Interest naturally centers on the two varieties of 1920, Souv. de Claudius Pernet, yellow, and Souv. de Georges Pernet, pink.

After lunch, M. Pernet-Ducher and Mlle. Pernet accompanied me to the rose establishment of Pierre Guillot, Chemin de St. Priest, Lyon-Monplaisir. Since the death of M. Guillot, two years ago, Mme. Guillot has managed the business. She was not at home, but her son Marc took us through the nurseries. A variety introduced by the firm in 1919 is La France Victorieuse. This has received a certificate of merit at the Bagatelle Rose-Gardens. It is much of the character of La France but more intense in its coloration.

It was late in the afternoon and we had time for but a brief call on M. Pierre Bernaix. He received us very cordially, but said that because of the dry weather and the lateness of the season, he had no blooms on his seedling roses worthy of notice, wherefore there was nothing to see.

Early the next morning M. Marc Guillot came to the hotel, and we visited places of historic interest in the city, going

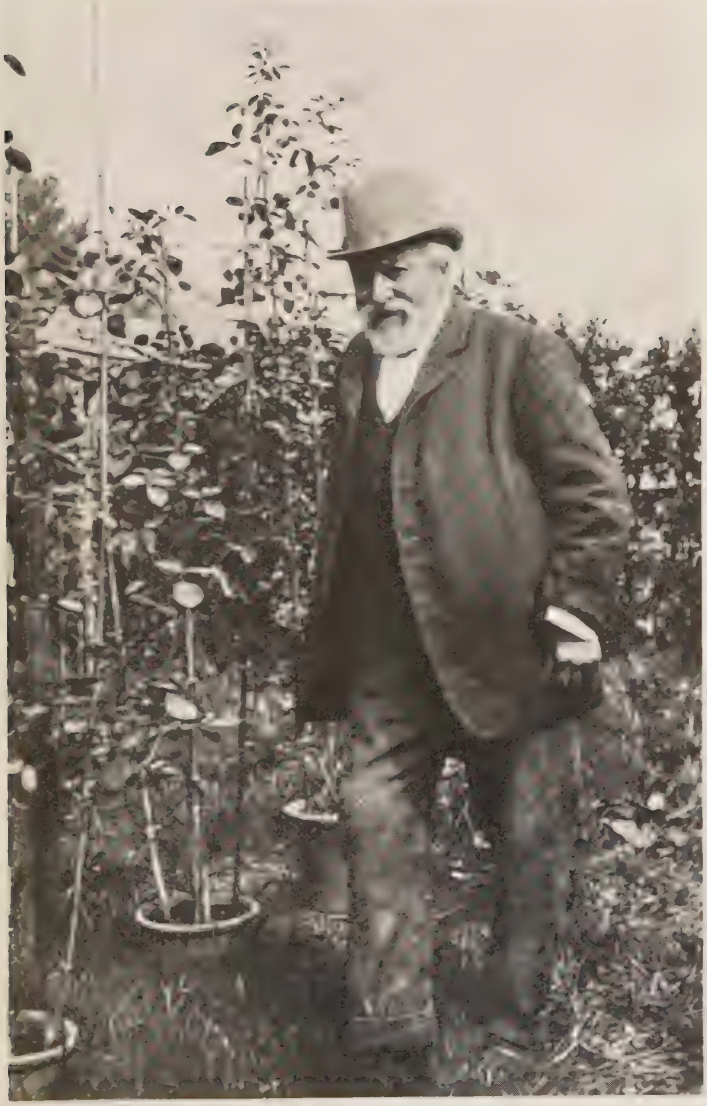


PLATE XIV. GEORGE PAUL, of Cheshunt, England

Mr. Paul introduced the first English Hybrid Tea rose, Cheshunt Hybrid, and many others. This photograph, made September 21, 1921, by Prof. E. A. White, shows him standing by his last introduction, Paul's Lemon-flowered Pillar. He died two weeks later at almost eighty years of age. (See page 133.)

thence to the Botanic Gardens. After lunch with Mme. Guillot and her interesting family, I returned to Paris.

The ride from Paris to Orleans was quite varied. M. René Barbier met me at the hotel, and the afternoon was spent at Barbier & Co.'s nurseries. These comprise about 25 acres in Orleans and about 180 acres situated 10 miles from the city. In Orleans, mostly roses, herbaceous material, and shrubs are grown, and in the larger section are fruit, ornamental, and forest trees. One of the firm's most interesting varieties of roses is Eugène Barbier (Frau Karl Druschki × Rayon d'Or), which is a deep golden yellow shading to a coppery red at the base of the petals. The flowers are very large when fully expanded, being almost six inches in diameter. The plants were most prolific and vigorous.

Sunday I was entertained by M. Turbat. The most of the day was spent in his nurseries, principally among the roses, although the large collection of herbaceous plants interested me. There are about a hundred acres under cultivation. Before Quarantine No. 37 went into effect, 500,000 roses were propagated annually, but only 150,000 are now grown.

In the Dwarf Polyantha section were many interesting unnamed seedlings. Those noted as particularly good among the named varieties were Vulcan, André Temple, Jeanne Soupert, Maman Turbat, Mme. Jules Gouchault, and Yvonne Rabier. The Hybrid Teas were in excellent bloom.

At the nurseries of M. Levavasseur I had a most amusing experience. The proprietor was not at home, and I tried to make the office staff understand that I was particularly interested in roses, and that my time was limited. M. Levavasseur's son-in-law was sent for in haste. He could speak but little English and understood I was an American buyer of rose stocks. He hurried me into an automobile, drove me about five miles out of town where there were large blocks of Manetti and briar stocks. He had the foreman pull many of the bushes to show me the splendid root systems, and all the time I was trying to explain that my interest was only in their original various varieties!

This concluded a truly memorable glimpse at the rose conditions of England and France in 1921, after the war and the shut-down of Quarantine 37.

The Rose Cut-Flower Outlook for 1922

By CHARLES H. TOTTY, Madison, N. J.

EDITOR'S NOTE.—No one is better acquainted with the place of the rose in the cut-flower market than our Treasurer, Mr. Totty. Himself a large producer and distributor, both of flowers and plants; he keeps in close touch with the rose world, in Europe as well as in America.

THE question is always interesting: Is the rose meeting its obligation as a cut-flower subject? Is it increasing in popular demand, or is the demand falling off?

These questions can easily be answered by anyone making a tour of our cut-flower markets in any of the large cities. The rose is really the fundamental basis on which the bulk of the cut-flower business is conducted. This applies both in volume and in the value of the flowers sold every day. While it is true that the rose never loses its hold on the public mind, at the present time the rose is more popular than ever. This situation has been brought about, of course, by the fact that the new introductions coming in every year maintain interest.

For next year we are all awaiting the new introduction, Hill's America. Everyone who sees this variety growing is highly enthused over it. This seems to be the "perfect rose" in every sense of the word! [See Plate XVII—ED.]

There is no doubt but that the popularity enjoyed by the carnation several years ago was caused by the advertising and publicity afforded it by Thomas W. Lawson. That period, however, has passed. Now the rose cut-flower men are alive and active, and to my mind represent the progressive end of the florists' business. They are the men who talk "cost of production," "returns per square foot," and other terms, well known to the efficiency expert but not so often understood by the florists.

Christmas, 1921, was marked by a large supply of long-stemmed flowers in the market, which did not, however, bring nearly the prices of recent years. The "pinching" business, that is to say, the blooming of the plants that had been "stopped" to produce quantities of flowers for Christmas, had been slightly

overdone. The growers of our acquaintance who had large crops for Thanksgiving, getting then comparatively poor prices for their flowers, did not come in very strong for Christmas, but came in with a wonderful crop again the last two weeks in January when the market was bare of good roses on account of the Christmas pinching, and then secured good results.

The lesson of last Christmas is, that the long-stemmed, expensive rose-supply can easily be overdone. While the demand at such seasons is for medium-length stem, or what is known in the parlance of the trade as "No. 1" and "Extras"—a demand that is practically unlimited—there is only a very limited call for the extra long-stemmed roses. The wise grower observes the signs of the times and governs himself accordingly.

A variety such as Columbia, for instance, gives stems amply long enough for all average purposes without any pinching whatever, and this should be borne in mind by all growers.

Another outstanding fact is, as we predicted two years ago, that Mme. Butterfly has taken the place of Ophelia in all of the large markets. It is a much kinder, stronger grower, and several shades better in color. Every day one notices in going around the market that until Mme. Butterfly is sold, there is little call for Ophelia. Yet I do not want to decry the wonderful influence that Ophelia has had on the cut-flower industry, for I must note that Mme. Butterfly, Columbia, and the wonderful new Hill's America are all children of Ophelia.

What is coming? This is the question that is always uppermost in the minds of the progressive rose-grower. He knows that he has to keep two jumps ahead of his competitor, if such a thing is possible, since the demand is for new varieties in the market at all times. Consequently, all candidates for public favor are carefully scrutinized.

What is new? Next year it will be Hill's America. When we say this variety is going to supplant Columbia in the markets of the country, it sounds like a tall story, now that every grower knows how to grow and cut Columbia. Not so long ago, when Mr. Hill distributed Columbia, and we in our humble New Jersey way collaborated, the complaints were long and loud regarding it. It would not produce perfect buds; it was this and it was that, and the retailers predicted it would never

make a cut-flower success. That, however, is now ancient history, for Columbia rapidly climbed to the top.

This fault is entirely overcome in the case of Hill's America. Not a single flower have we seen malformed or flat or disfigured in any way, in our test of this variety. This alone stamps it as an advance over Columbia. The bud is long and pointed, a feature that always gave Killarney most of its charm as a beautiful rose. It is for these reasons that I predict that Hill's America is going to chase Columbia out of the market.

So much for pink roses! We have other candidates on the horizon, but none so far as I know to touch Hill's America.

How is Angelus progressing in the market? Here we have a curious condition. For years the only white rose that could be successfully handled was White Killarney, which for a while was very productive. This eventually produced Double White Killarney, which is a wonderful variety where it can be grown without mildew, although it is not free-flowering. Therefore the growers have been looking for a white rose that would be free and clean-growing. Then the "flu" epidemic came in the fall of 1918, and what up to then had been the almost invariable custom of sending only white flowers to funerals was changed. Any flower, regardless of color, was gratefully accepted on account of the scarcity. This fashion of using different colored flowers for funerals has continued up to this time, wherefore the florist is no longer obligated to grow white roses. Consequently, the strong demand for a good white rose is no longer with us.

Red roses are still in a very unsatisfactory condition. Crusader enjoys a measure of popularity in some markets, and Hadley also, but the latter produces so few flowers that it is hardly worth growing. We hear stories of wonderful red seedlings from the North and West, and there is no question but what one or two good red roses could be well taken care of. Just at present one must be satisfied with either Crusader or Hadley, until something better presents itself. Milady is also well received by some growers.

Some of us believe that rose-growers can look to the future with more equanimity than can any other branch of the profession. Their product, when well grown, always has the pull on the market, and I believe this condition will continue.

The Story of Priscilla

By WALLACE R. PIERSON, Cromwell, Conn.

EDITOR'S NOTE.—In what follows, Mr. Pierson, who is the working head of a great rose-growing firm that produces cut roses and rose plants in enormous quantities, does not tell the whole "story of Priscilla" that the Editor asked for, wherefore this necessary extension of it is added.

Early in 1921, there was knowledge that Mr. Pierson was growing a great new Montgomery rose. On the morning of July 1 of that year he brought with him to Harrisburg a great sheaf of wonderful flowers, from which were selected those to be used in the Editor's color-printing establishment in the production of the best possible representation of the rose. Photographs and color notes were made, and the work pushed to early completion, so that it might avail to accurately present the variety to the nation's florists assembled in August. When the color-plate was ready it was submitted to Mr. Pierson at Cromwell, but it did not *there* seem to properly show the color of the rose as it grew. Fresh roses were supplied and another effort followed, which was no more successful when compared with *the then blooming roses*, whereupon the effort was abandoned. (The plate thus completed is published for the first time as the Frontispiece to this number of the Annual.)

It was known that, relying on the reputation of both the Piersons and the Montgomerys, producing cut-rose florists had made large advance purchases of plants of this new rose, which meanwhile had received the name of Priscilla, and later of Montgomery's Priscilla, in view of the use of that name for a Hybrid Tea rose sent out in 1910 by Peter Henderson & Co. Great was the surprise therefore, when in the late fall of 1921 formal announcement was made by the firm of A. N. Pierson, Inc., of the entire withdrawal of the rose from the plant market, including the cancellation of all orders received.

As the facts became known, it appeared that a mighty fine thing had been done by the originator and introducer of this rose. Mr. Pierson's story, which follows, will tell of Priscilla's unfortunate color inconstancy, but it does not tell of the high sense of professional and commercial honor shown in thus pocketing a large loss in orders to uphold standards. Nor does he tell what a superbly impressive rose the rejected Priscilla is, despite its color variation. The Editor bears witness to that.

It is in point here to make two observations. First, emphasis needs to be put upon the exceedingly high standards maintained by American rose hybridists who work for winter-blooming roses—standards very far above those in use abroad. Second, hope is expressed that the inconstant New England maiden, this rejected Priscilla, may be permitted to escape into the garden. A rose of such size, vigor, and blooming quality might easily be a real winner outdoors.

THERE exists between the Montgomery Company of Hadley, Mass., and A. N. Pierson, Inc., of Cromwell, Conn., a very close relationship and mutual understanding, and not only one concern, but both, deserve the praise or censure that may be due from any action relating to the seedling roses raised by the Montgomery Company.

First of all, let it be clearly understood that the Montgomery

Company have no facilities for marketing young rose plants. A. N. Pierson, Inc., maintain practically a plant factory. The Montgomery Company raise seedling roses, thousands of them, and know roses as well as any group of men in the world. To produce a rose which is better than existing sorts is the ambition of Mr. Montgomery, and his energy has been given over to the slow and painstaking work of carrying on to the flowering stage thousands of new seedlings each year—to end by consigning them to oblivion, with the exception of those few which look better than existing sorts.

To produce a new rose with *some* good qualities is comparatively easy, and the rose without a fault has yet to be developed. For example, a winter-flowering rose is the most to be desired. The insistence upon the winter-blooming qualification has caused many a good summer rose to be discarded, and has led Montgomery to be over-critical with regard to the qualification of winter production. With him, winter flowering means flowering at normal rose temperature, when in reality our best winter roses are grown at an advance of a few degrees over the old-time standard of 60 degrees at night.

The story of Priscilla is not a long one, but it presents to the rose world a lesson that it may well bear in mind. Among the Montgomery seedlings of 1920 was a wonderful winter-blooming rose, having a long bud with a beautifully shaped flower. In form it was the most perfect rose that we have ever seen, and it was plus in its winter-flowering characteristics. All parties interested knew that there was a lack of "life" in the color which might be considered against the variety, but they believed that its wonderful growing habit and its winter-blooming qualities would offset the color weakness.

Consequently, it was propagated by both firms, and trial lots were placed with fifty of the best rose-growers in the country. During the early part of 1921, the variety made a sensation. The flowers were large and perfectly formed. Under bright sunlight the color was passably good and the plant-growth was wonderful. With the coming of fall weather and the gray days of October, the color suffered. The decision to withdraw Priscilla was based upon the opinion of the rose-buying public and those who were buying the variety as a

cut-flower. It became evident that no rose with a color which lacks what we rose men call "life" can become a success, and during the dark weather, Priscilla lacked luster and life in coloring.

The Montgomery Company and A. N. Pierson, Inc., are in absolute accord with regard to Priscilla. We have nothing to regret, except that we were mistaken, and we have only to be thankful that no injury was done anyone, except ourselves, by our failure to recognize the color weakness. The question of loss of sales is small compared with possible loss of prestige, or confidence, and neither firm has suffered as the result of the action taken.

On both places Priscilla has done well this winter, and has sold well. In some cases, Priscilla has friends who call for it. They understand the rose, know its value, and appreciate its uses. The shortage of winter roses has given this wonderful winter bloomer a place in the market, but Priscilla will be an object lesson to those who do not place a very high estimate on color.

Priscilla is now being used by Montgomery in his hybridizing, and it is to be hoped that from this wonderful plant may come a new rose which will combine all the good attributes of Priscilla with a color which will be bright, lively, and lasting. Give us a color that will please and hold! Combine with it the fragrance of Hadley! Give us the stem, neck, and form of this rose, and add the vigor and productiveness of Priscilla! Then you will be giving us what the rose world will welcome. It is a free and open field.

We want, and are suffering for, a new forcing yellow sort to take the place of Mrs. Aaron Ward and Sunburst. We need a crimson which has a heavy petal that is underlaid with scarlet and that does not turn blue. We need a real red rose, not a crimson, that will grow and flower as Priscilla does, and when we get these we shall have made progress. They will come! Some of them are now in sight, and the Montgomery seedlings which are blooming now and the thousands which are just emerging from the seed-beds are the promise of the future. American winter-blooming roses will continue to improve.

New Roses of 1921

By COURTNEY PAGE
Honorable Secretary, National Rose Society of England

EDITOR'S NOTE.—Members of the American Rose Society are peculiarly fortunate in having each year presented to them not only the photographs of the Gold Medal and Certificated roses of England, but in being able to read and profit by the frank, fair, and expert opinions on them by the highest world authority, the genial and kindly secretary of the National Rose Society.

The pictures of the prize-winners in Plates XV and XVI, facing pages 144 and 145, were supplied by Mr. Page.

American rose-lovers can do themselves a service in taking membership in the National Rose Society, the publications of which are most valuable. Send an international money order for a half-guinea (about $2.50) to Mr. Courtney Page, 25 Victoria St., Westminster, S. W. 1, London, England.

MOST rose-lovers in England had been patiently looking forward to seeing in the 1921 exhibitions many of the wonderful novelties that the raisers of new roses are believed to possess. The unusual weather, however, quite upset all calculations, and we shall still have to wait in patience. It is many years since the "old country" has experienced such abnormal weather as prevailed during the past year. We have had droughts in the past, but never such a continuous one. At the present time, a little stream below my house, usually in flood during February, is still dry.

It will be understood by your readers, I believe, that our raisers have had to contend with great difficulties in 1921. Nevertheless some good novelties were staged during the year.

Your new members may need to be informed that new varieties of roses exhibited in England are broadly considered as (1) exhibition roses, including those best suited for showing separately as specimen blooms, and (2) garden and decorative roses, including those best adapted for garden cultivation.

Awards are made at any of the National Rose Society's shows by a special committee. The cherished Gold Medal may be awarded to any new rose of which at least six blooms are staged, together with a blooming plant as growing in the ground. A Certificate of Merit may be awarded to a variety not quite up to the Gold Medal standard, and which the Committee on New Seedling Roses desires to see at a future date.

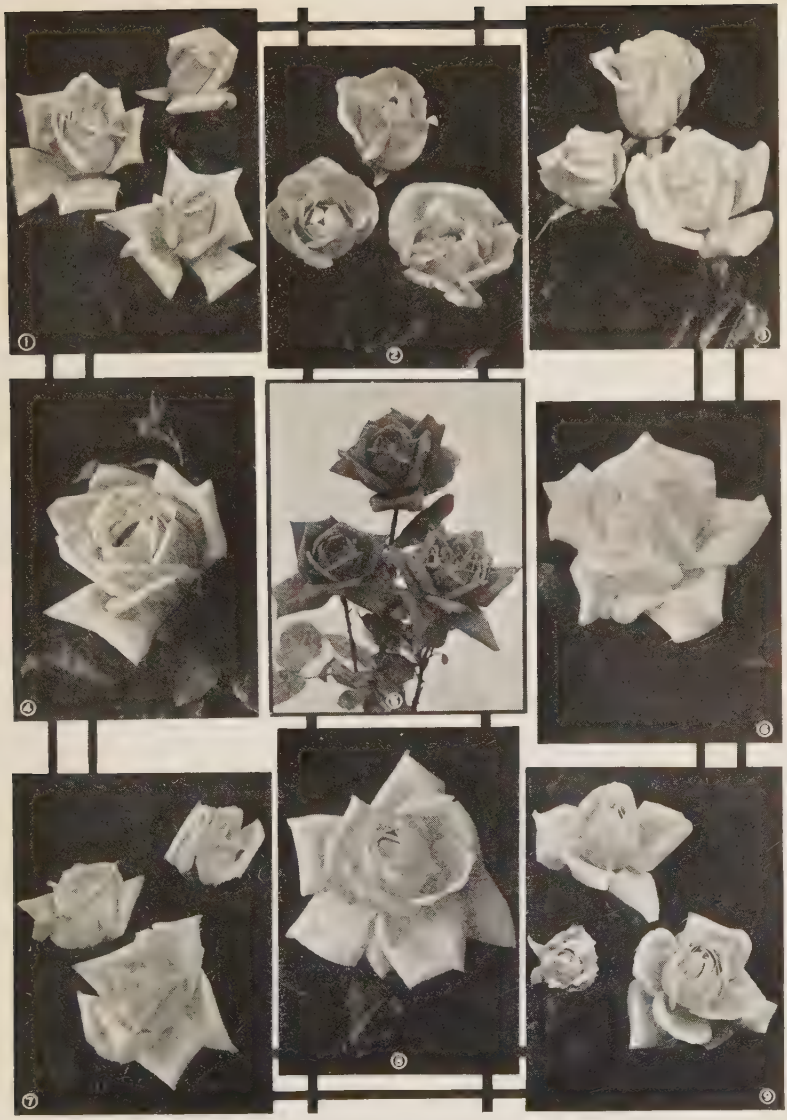


PLATE XV. The English Gold-Medal Roses of 1921

1, Portia; 2, Dewdrop; 3, Florence M. Izzard; 4, Mrs. Henry Bowles; 5, Lady Sackville; 6, Souv. de R. B. Ferguson; 7, Leslie Pidgeon; 8, W. E. Wallace; 9, Muriel Wilson. (Photographs by courtesy of Courtney Page, Hon. Secretary National Rose Society of England. See page 144.)

PLATE XVI. The English Gold-Medal Roses of 1921

1, Earl Haig; 2, Mrs. H. L. Wettern; 3, Sybil; 4, Phœbe; 5 Snowflake. (Photographs by courtesy of Courtney Page, Hon. Secretary National Rose Society of England. See page 141.)

NEW ROSES OF 1921

A Gold Medal was awarded to each of the following:

[Those followed by the dagger sign (†) are illustrated in Plates XV and XVI, facing pages 144 and 145.—EDITOR.]

Padre, H.T. (B. R. Cant & Sons.) A good-shaped cerise-cherry colored rose, fragrant, and apparently a good grower. I have seen this rose growing very finely under glass, but so far have not seen it in the open. In commerce.

Phœbe, H.T.† (B. R. Cant & Sons.) This is a fine-shaped, high-centered bloom, carried on long stems. The color is a pale primrose, shaded white; the flower is sweetly scented. The pot plant exhibited was well grown and vigorous. Here again the blooms exhibited were grown under glass, and for such purposes both varieties can be well recommended.

Muriel Wilson, T. † (George Prince.) This beautiful Tea rose was raised by that veteran, Dr. Campbell Hall, of Monaghan, and was staged in fine form by Mr. Prince. The enormous blooms, with massive petals, are perfectly shaped, while its rich lemon-cream color reminds one of a glorified White Maman Cochet; delicately fragrant.

Betty Uprichard, H.T. (Alex. Dickson & Sons.) One of those many colored roses so difficult to describe. Generally, it is of orange-scarlet, mixed with orange. The plant exhibited seemed free from mildew and fairly vigorous. A lovely garden and decorative rose; one wishes the blooms were larger. In commerce.

Coral Cluster, Poly. Pom. (R. Murrell.) This charming coral-pink sport from Orleans is a great acquisition to the Polyanthas, and is excellent alike for growing under glass and out-of-doors. Its fascinating color must make it a warm favorite. It is a rose that has come to stay. In commerce.

Snowflake, Wich.† (Frank Cant & Co.) A vigorous-growing rose with elegant trusses of pure white, semi-double, round flowers with pretty golden stamens, making it most enchanting. One is reminded very much of the old double ten-weeks stock. It is really a pure white rambler. It was also awarded the Cory Cup for the best seedling climbing rose raised by a British rose-grower during the year. In commerce in 1923.

Earl Haig, H.T.† (Hugh Dickson.) When first this rose was seen at Leeds while with Mr. E. G. Hill, it struck us that it was very much like an old variety, Earl of Dufferin, both in color and shape; in fact, one could see very little difference. On this occasion it was staged in better form. The cupped blooms previously noted had changed, very probably the result of more mature growth of the plants, to fine, large, high-pointed flowers, such as the exhibitor loves. The color is deep crimson, flushed maroon, and the rose is sweetly scented.

A Certificate of Merit was awarded to each of the following:

Mrs. Oakley Fisher, H.T. (B. R. Cant & Sons.) A very large, single-flowering rose, somewhat after the style of Irish Fireflame. The blooms are truly single, carried on dark red stems, and are of good form, not apt to crinkle with age. The color of the petals is a pale golden buff, with deeper-colored stamens. An attractive variety, most useful for decorative purposes. In commerce.

Mrs. Henry Bowles, H.T.† (Chaplin Bros.) A very useful rose that promises well, and of vigorous, upright growth. The brilliant, warm salmon-pink, sweetly scented blooms are most attractive. I have seen this rose on many occasions during the past two years, and its habit of growth and freedom of flowering make it a most desirable introduction for garden purposes. In commerce.

Lady Craig, H.T. (Hugh Dickson.) A vigorous-growing variety with good-shaped blooms. The color is a rich orange, tinted yellow, the edge of its broad petals being a much lighter shade. Faintly scented, but it makes a useful acquisition to our bedding varieties. In commerce.

Sybil, H.T.† (Bees Ltd.) A large, perfectly shaped, high-pointed bloom, quite up to exhibition form. The color, a blush-pink, is most lasting. Fragrant, and a good grower, it should prove a useful addition.

Rosa lucens erecta. (George Paul.) This is a bold and free-flowering hybrid of *R. lucens* and very vigorous. The blooms are abundantly produced in clusters, and are semi-double. The dark green foliage and hairy stems, together with the blush-pink blooms, make the variety very attractive.

Leslie Pidgeon, H.T.† (Hugh Dickson.) A vigorous-growing rose, recommended both for exhibition and garden purposes. The color is a creamy yellow, flushed with pink, with a greenish line at the base of the petals. The blooms exhibited were wonderfully fresh, and as they had been brought over from Belfast, this speaks well of their lasting qualities. It is primarily a garden rose.

Florence M. Izzard, H.T.† (S. McGredy & Son.) A delightful rose, of a glorious golden yellow color; quite one of the best of that shade the raiser has given us. Starting with Golden Emblem, with its large, open, cupped blooms, we now have in this rose the full pointed center that has long been the aim of rose-growers. The blooms are of medium size, with a distinct trace of tea scent. The plants exhibited did not show such strong growth as one would have liked to have seen, but it was evident that that was only a passing fault, doubtless caused by over-propagation. There was a diversity of opinion as to whether this rose or Mabel Morse was the better.

Dewdrop, H.T.† (S. McGredy & Son.) A very pretty medium-sized rose of a rich pale pink color, passing to pale rose; very sweetly scented. The habit of growth is vigorous and branching, and its freedom of flowering will make it a valuable garden and bedding variety.

Mrs. H. L. Wettern, H.T.† (S. McGredy & Son.) A very large, high-pointed bloom of a vivid pink color, particularly bright when the blooms are half opened. The blooms reminded one of an improved Countess of Shaftesbury, but it was noticeable that they did not blue with age; sweetly scented. It will be useful to the exhibitor, but it is best described as a vigorous-growing garden variety.

Lady Sackville, H.T.† (S. McGredy & Son.) An extraordinary variety and most certainly the nearest approach to a black rose that we have. Its color is perhaps best described as a black shade. The blooms, which are small and cupped, are carried on upright stems and are fragrant. The foliage is dark olive-green, with dark red stems. It quite eclipses Prince Camille de Rohan.

Corlia, H.T.† (Bees, Ltd.) A very lovely rose of glowing terra-cotta color, and sweetly scented. The habit is vigorous but, unfortunately, the plant exhibited showed unmistakable signs of mildew. That was a matter for regret, but perhaps we shall see it again under better conditions.

Souv. de R. B. Ferguson, H.T.† (Ferguson.) This is a very fascinating rose of medium size, and sweetly scented; a soft golden fawn, shaded apricot, overshot with warm pink. The habit is vigorous and branching, while the dark green foliage shows distinct traces of the Pernetiana blood.

W. E. Wallace, H.T.† (Hugh Dickson.) A rose of showy and vigorous habit, with large, handsome foliage. The very large blooms, of exquisite form, are abundantly produced and are rich golden yellow. The dark green foliage and dark red stems make it very attractive, and it promises well.

The New Roses of All the World

AN EDITORIAL SURVEY

PART of the service of the American Rose Society and of this, its Annual, is to acquaint members with the world's new roses. The list indexed below, and the descriptions that follow, are believed to include all the rose introductions in the world that have been announced since the publication of the similar survey in the 1921 Annual.

Originators in all lands have been provided with the official Record Card of the American Rose Society, in order that we may present the complete and detailed descriptions so desirable. It is obviously impossible to guarantee accuracy, but it may at least be assumed that the redundant adjectives have been thus eliminated from the various descriptions. The roses prefixed by an asterisk (*) have been described for us on these cards. A total of 140 new varieties are here recorded.

No similarly complete list is, it is believed, made anywhere else. Taken in connection with the accurate list of American roses, and with the list of all roses in American commerce to be shortly published in the Official Catalogue of Standardized Plant Names, it seems probable that we are placing at the command of the members of the American Rose Society information nowhere else accessible.

The index and descriptions are complete for 1921 roses or for older roses not before catalogued.

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FRANCE

**Albertine,* H.W. (Barbier & Co., 1921.) *R. Wichuraiana* × Mrs. A. R. Waddell. Bud large, ovoid, dark vermilion; flower large, double, open, cupped, very lasting; coppery chamois inside, outside bright coppery salmon-pink; borne in cluster on medium-long stem; fragrant. Foliage abundant, rich green, disease-resistant. Bark and twigs reddish brown; many thorns. Very vigorous, climbing, trailing habit; profuse bloomer in May and June; hardy.

Beauté de France, H.T. (Toussaint Mille Sons, 1920.) Mme. Mélanie Soupert × Kaiserin Auguste Victoria. Bud large; flower large, double, finely formed; full, creamy white, passing to pure white, inside of petals deep yellow; fragrant. Vigorous; very hardy.

Blanche Amiet, H.T. (Turbat & Co., 1921.) Bud long-pointed, deep orange-yellow; flower full; coppery salmon, passing to clear rose when open. Foliage glossy, dark green. Vigorous.

Etoile de Feu, Per. (Pernet-Ducher, 1921.) Flower large, full, globular, salmon-pink and coral-red, shaded with flame tint. Foliage glossy bronze-green. Very vigorous, bushy, branching habit; very hardy.

**Eugène Barbier,* See page 137.

Flore Bertholet, D.Poly. (Turbat & Co., 1921.) Bud large, bright yellow; flower large, double, clear lemon-yellow, passing to white when expanding; borne in cluster. Beautiful foliage. Vigorous, branching habit.

Fraicheur, H.W. (Turbat & Co., 1921.) Very lasting, soft pink blooms in pyramidal cluster. Foliage glossy dark green. Very vigorous.

Hélène Duché, H.T. (Buatois, 1921.) Mme. Caroline Testout × Reine Emma des Pays-Bas. Flower very large, full, and double; soft rose with silvery reflexes, carmine border; borne singly. Vigorous, branching habit.

**Jacotte*, H.W. (Barbier & Co., 1920.) *R. Wichuraiana* × Arthur R. Goodwin. Bud large, ovoid, orange and yellow; flower large, semi-double, open, cupped, very lasting; deep coppery yellow, tinted coppery red; borne, several together, on long, strong stem; fragrant. Foliage abundant, leathery, glossy, dark green, of medium size, disease-resistant. Bark green; many thorns. Very vigorous, climbing, trailing habit; blooms profusely in May and June; hardy.

Jeanne Excoffier, Per. (Buatois, 1921.) Mme. Philippe Rivoire × Mme. Edouard Herriot. Bud large, long-pointed; flower large, full; daybreak-pink, inside of petals buff-colored. Vigorous, branching.

Joseph Guy, D.Poly. (Nonin; intro. by Royer, 1921.) Flower very large; bright scarlet-red. Vigorous; profuse bloomer.

**Jules Tarbart*, Per. (Barbier & Co., 1920.) Unnamed seedling × Mme. Edouard Herriot. Bud large, ovoid, salmony China rose color; flower large, double, high-centered, lasting; silvery salmon-pink, with coppery coral-pink center; borne singly and several together on good stem; slight fragrance. Foliage sufficient, large, leathery, glossy, dark bronzy green, disease-resistant. Vigorous, bushy; flowering freely and continuously during the season; hardy.

**La Somme*, Per. (Barbier & Co., 1921.) Mme. Caroline Testout × Rayon d'Or. Type, Mme. Caroline Testout. Bud large, ovoid, orange-red, with coppery red markings; flower large, semi-double, open, cupped, lasting; deep coral-red, with coppery reflex turning light salmon; borne, several together, on strong, medium long stem; fragrant. Foliage sufficient, medium size, leathery, glossy dark green, disease-resistant. Bark green and reddish brown; few thorns. Vigorous, bushy; blooms freely and continuously from June to October; hardy.

Louis Bourgoin, H.T. (Gillot, 1921.) Bud very large; flower enormous, very full and lasting; flesh-pink, passing to silvery pink; borne on long, strong stem; fragrant. Thorns, many, strong. Very vigorous; free bloomer.

Maman Dental, H.T. (Dental, 1921.) Sport of Mme. Caroline Testout. Flower large, cupped, pure rose-pink, borne on strong stem; very fragrant.

Mémée Azy, H.T. (Gillot, 1921.) Etoile de France × Le Progress. Bud long-pointed; flower large, full; pink, shaded carmine, petals bordered whitish pink, stamens orange-yellow; borne singly on long, strong stem; fragrant. Foliage bronzy green; many thorns. Vigorous, upright, bushy; free bloomer.

**Mme. Adolphe Lafont*, H.T. (Croibier & Son, 1921.) Sport of Joseph Hill. Bud medium size, ovoid; flower medium size, semi-double, open, lasting; deep apricot-red, tinted buff; borne singly on short stem; decided fragrance. Foliage normal, small, glossy bronze-green, disease-resistant. Moderate grower, dwarf; bears a good number of blooms at intervals during the season; hardy.

Mme. Alexandre Dreux, Per. (Soupert & Notting, 1921.) Rayon d'Or × Primerose. Bud long-pointed; flower well formed, large, full, brilliant golden yellow without shading. Vigorous, upright, branching; profuse bloomer.

**Mme. André Charmet*, H.T. (Croibier & Son, 1921.) Mme. Mélanie Soupert × Mme. Maurice de Luze. Type, Mme. Mélanie Soupert. Bud large, ovoid; flower large, full, double, very lasting; carnation-pink; borne singly on medium length stem; fragrant.

Mme. Edmond Gillet, H.T. (Pernet-Ducher, 1921.) Mme. Edmond Rostand × Marquise de Sinety. Bud long-pointed; flower very large, elongated cup-shape, full; reddish nankeen-yellow, slightly shaded with carmine-lake at the ends of petals. Foliage reddish green. Few thorns. Vigorous, upright.

Mme. Herriot Panachée, Per. (Cassegrain, 1921.) Sport of Mme. Edouard Herriot. Bud medium size, long-pointed, coral; flower very large, double, lasting; coral and golden yellow; borne several together, on strong stem. Foliage sufficient, large, glossy dark green, disease-resistant. Many thorns. Upright habit; blooms profusely from June to October; hardy.

Mme. Mercier de Molin, H.T. (Schwartz, 1921.) Comte G. de Rochemur × Liberty. Bud long-pointed; flower large, full; fiery red, tinted with crimson, edges of petals slightly tinged with rose-pink; borne on long, strong stem; sweet fragrance. Vigorous; very free bloomer.

Monette, H.W. (Aubert Hemeray, 1921.) *R. Wichuraiana* × Yvonne Rabier. Bud small; flower small, full, very double, lasting, white, borne in clusters; strong fragrance. Foliage abundant, glossy dark green, disease-resistant. Very vigorous, climbing; blooms in abundance in June and July; hardy.

Paulette Buffet, H.T. (Gillot, 1921.) Bud long-pointed; flower full, high-centered; pale flesh-pink, reverse of petals silvery pink; generally borne singly on long, strong stem. Foliage dark bronzy green. Thorns small. Vigorous, upright, very bushy; profuse bloomer.

Perle Angevine, D.Poly. (Délépine, 1920.) Jeanne d'Arc × Mrs. W. H. Cutbush. Type, Maman Levavasseur. Bud small; flower small, open, double, lasting, pale rose, borne in cluster on strong stem. Foliage sufficient, medium size, rich green, disease-resistant. Few thorns. Moderate grower, upright, bushy; blooms profusely from June to October.

Regina de Alvear, H.T. (Sauvageot, 1921.) Mme. Mélanie Soupert × Mme. Segond Weber. Bud ovoid; flower very large, globular, very double, lasting; white, lightly shaded with pink at center; borne on long stem. Foliage large, rich green, disease-resistant. Very vigorous, upright; blooms freely; hardy.

Rev. Williamson, Per. (Pernet-Ducher, 1921.) Bud long-pointed, deep coral-red; flower large, full, globular; coral-red shaded carmine-lake. Foliage reddish bronze-green. Very vigorous, spreading, branching habit.

Souv. d'Antonin Poncet, H.T. (Schwartz, 1921.) Mme. Maurice de Luze × Lady Ashtown. Bud long-pointed; flower very large, full, very lasting; carmine, with paler flecks. Very vigorous and free blooming.

Souv. de Claudius Denoyel, H.T. (Chambard, 1920.) Chateau de Clos Vougeot × Commandeur Jules Gravereaux. Type, Commandeur Jules Gravereaux. Bud very large, long-pointed, brilliant velvety red; flower very large, cupped; rich glistening crimson-red, tinted with vermilion; borne on strong stem; fragrant. Very vigorous, upright, branching.

Souv. de Georges Pernet, Per. (Pernet-Ducher, 1921.) Unnamed variety × Mme. Edouard Herriot. Bud very large, ovoid; flower very large, full, globular; oriental red, shaded with yellow, ends of petals cochineal-carmine; borne on long, strong stem. Foliage dark bronzy green. Very vigorous, upright, bushy, branching; extremely hardy. Gold Medal, Bagatelle Rose Trials, 1921.

**Souv. de Jean Croibier*, Per. (Croibier & Son, 1921.) Mme. Mélanie Soupert × Lyon Rose. Bud very large, globular-ovoid; flower very large, full, open, cupped, very double, exceedingly lasting; bright salmon-pink, shaded chamois, center coral-red shaded golden yellow; borne singly on long, strong stem; slight fragrance. Foliage sufficient, medium size, glossy bronze-green, mildews. Very vigorous, trailing, upright habit; blooms freely all season; hardy. Gold Medal.

Souv. de Mme. Boullet, H.T. (Pernet-Ducher, 1921.) Sunburst × unnamed variety. Bud long-pointed; flower large, full, dark cadmium-yellow. Vigorous, high, spreading, branching habit; free and continuous bloomer; very hardy.

Souv. de Mme. Gauthier-Dumont, H.T. (Guillot, 1921.) Bud long-pointed; flower brilliant scarlet, borne on long, strong stem. Very vigorous, upright.

Souv. de Paul Grandclaude, H.T. (Sauvageot, 1921.) Mme. Mélanie Soupert × Beauté de Lyon. Type, Mme. Mélanie Soupert. Bud large, globular; flower very large, globular, semi-double, lasting; daybreak-yellow, shaded pink and in autumn light brown; borne on long, strong stem; strong fragrance. Foliage sufficient, large, dark green. Vigorous, upright, dwarf; blooms freely from June to October.

Souv. de René Grognet, H.T. (Chambard, 1921.) Bud long-pointed, apricot-carmine; flower very large, very double; coppery orange-yellow, shaded with carmine; borne on long, strong stem. Foliage bronzy purplish green, disease-resistant. Vigorous, branching; continuous bloomer.

Souv. du Papa Calame, H.T. (Gillot, 1921.) Sport of Jonkheer J. L. Mock. Bud large, long-pointed; flower large; carmine-pink, outside of petals silvery pink, stamens salmon; borne on long, strong stem; fragrant. Foliage sufficient; very few thorns. Very vigorous, upright, bushy; blooms abundantly.

Souv. du Sergent Crettè, H.T. (Chambard, 1921.) Mme. Mélanie Soupert × unnamed seedling. Bud long-pointed, flesh-color, shaded with golden yellow, bordered carmine; flower very large, cupped; coppery golden yellow, shaded with carmine; borne on long, strong stem. Foliage bronze-green; few thorns. Very vigorous, upright, branching; continuous bloomer.

Toison d'Or, H.T. (Pernet-Ducher, 1921.) Bud ovoid, orange-yellow; flower large, full, globular; apricot-yellow, shaded with orange-red. Vigorous, spreading, branching habit; profuse bloomer.

Vicomtesse de Chabannes, H.W. (Buatois, 1921.) Flower large, semi-double; purplish crimson, center white, forming a distinct eye; borne in enormous cluster. Very vigorous, climbing habit.

Vicomtesse Pierre du Fou, H.T. (Sauvageot, 1921.) L'Ideal × Joseph Hill. Bud medium size, ovoid; flower large, very double and lasting; red passing to deep pink; borne on short stem; strong fragrance. Foliage sufficient, medium size, glossy dark green, disease-resistant. Few thorns. Climbing, bushy habit; profuse bloomer; all season; very hardy.

Victor Mayer, H.T. (Buatois, 1921.) Bud long pointed; flower blood-red, reflexes deeper, borne singly. Vigorous, upright; profuse bloomer.

Violette, Mult. (Turbat & Co., 1921.) An improvement on Veilchenblau in habit of growth. Flower pure deep violet, in large cluster.

Vulcain, D.Poly. (Turbat & Co., 1921.) Type, Orleans Rose. Flowers full, deep cherry-red. Foliage dark green; few thorns. Vigorous.

Yvette, H.T. (Buatois, 1921.) Mrs T. Hillas × Mme. Edouard Herriot. Flower very large, full, salmon-yellow. Vigorous, branching; profuse bloomer.

GREAT BRITAIN

Bessie Chaplin, H.T. (Chaplin Bros., 1921.) Bloom enormous, 7 to 9 inches across; bright pink, shaded deeper toward the base. Vigorous, upright. First prize and Silver Medal at City of London Show.

Corlia. See page 146.

Dainty, H.T. (Hugh Dickson, 1921.) Bud very long-pointed; flower large, full, of exquisite form, very lasting; rosy apricot, very heavily flamed and tinted cherry-pink, deeper pink at edges and reverse of heavily reflexed petals; fragrant. Foliage glossy, light green. Vigorous, free-branching; profuse bloomer.

Dewdrop. See page 146.

Diana, H.T. (Bees, Ltd., 1921.) Mrs. F. Workman × Sunburst. Flower full, perfectly formed; Malmaison pink, fading away on reflex of petals and merging into lemon-cream. Foliage disease-resistant. Moderately vigorous.

Dorothy Haworth, D. Poly. (Bees, Ltd., 1921.) Leonie Lamesch × Ænnchen Müller. Flowers borne in huge cluster; coral-pink, with most delicate shell tints and shadings of salmon, becoming paler as the flower ages. Foliage glossy dark green. Vigorous, bushy; blooms continuously throughout the season.

Emmeline, H.T. (W. Paul & Son, 1921.) Bud pure deep yellow; flower lemon-yellow. Fine foliage. Vigorous; profuse bloomer; hardy.

Florence M. Izzard. See page 146.

Florence, H.T. (W. Paul & Son, 1921.) Bud long-pointed; flower very large, silvery pink. Vigorous. Certificate of Merit, Exposition of Chelsea, 1921.

J. G. Glassford, H.T. (Hugh Dickson, 1921.) Bud long-pointed; flower very large, high-centered; clear deep crimson-lake, unfading. Foliage large, dark green. Very vigorous, free-branching. Gold Medal, Royal Horticultural Society (Ireland) and Scottish Rose Society.

John Downie, Per. (Dobbie, 1921.) Sport of Lyon Rose. Bud very large, long-pointed; flower very large and double, globular, lasting, salmon, borne singly on strong stem. Foliage sufficient, large, soft, dark green, disease-resistant. Vigorous, bushy; blooms freely all season; hardy.

**John Hart*, H.T. (Hicks, 1922.) Bud large, long-pointed; flower very large, full, open, high-centered, double, lasting; cherry-pink; borne singly on long, strong stems; slight fragrance. Foliage sufficient, large, dark green, wrinkled, disease-resistant. Vigorous, dwarf; profuse and continuous bloomer.

Lady Anderson, H.T. (A. Dickson & Sons, 1920.) Bud large, long-pointed; flower large, cupped, high center, very lasting; deep coral-pink, shading to flesh and yellow, borne, several together, on long stem; fragrance strong. Foliage sufficient, medium size, glossy, rich green, disease-resistant. Vigorous, upright, bushy; profuse bloomer from June to October; hardy.

Lady Craig. See page 146.

Lady Elphinstone, Per. (Dobbie, 1921.) Sport of Mme. Edouard Herriot. Bud long-pointed; flower very large, open, semi-double, very lasting; Indian yellow, passing to clear rose; borne singly on strong stem. Foliage abundant, large, glossy dark green, disease-resistant. Moderate grower, bushy; profuse bloomer, from June to October; hardy.

Lady Sackville. See page 146.

**Lady Verey*, H.T. (Hicks, 1922.) Type, La France. Bud large, long-pointed; flower large, high-centered, double, lasting, rose-pink, borne singly on good stems; fragrant. Foliage sufficient, large, light green. Few thorns. Moderate grower, dwarf; profuse bloomer.

Leonora, H.T. (W. Paul & Son, 1921.) Flower very large, globular, very full; brilliant velvety red, center shaded fiery red. Vigorous.

Leslie Pidgeon. See page 146.

**Lucile Barker*, H.T. (Hicks, 1922.) Type, Lady Hillingdon. Bud medium size, long-pointed; flower medium size, full, high-centered, semi-double, lasting; apricot-yellow; borne singly on long stem; fragrant. Foliage sufficient, bronze-green, disease-resistant. Vigorous, dwarf; profuse and continuous bloomer.

Macbeth, H.T. (Bees, Ltd., 1921.) Richmond × Admiral Ward. Flower large, well shaped, very lasting; deep crimson, shaded with a still deeper hue; fragrant. Foliage dark green, disease-resistant. Vigorous.

Margaret M. Wylie, H.T. (Hugh Dickson, 1921.) Bud very long-pointed; flower of immense depth, high-centered; tender flesh-color, heavily flushed deep rosy pink toward edges of petals; fragrance strong. Foliage glossy, dark green Vigorous, upright, free-branching.

Marjorie Bulkeley, H.T. (Hugh Dickson, 1921.) Bud large, pointed ovoid; flower very large, full, of exquisite form; buff-ochre, heavily flushed rose-pink passing to silvery pink with age; fragrant. Foliage large, dark green. Vigorous, free-branching; blooms continuously all season. Gold Medal, National Rose Society and Royal Horticultural Society (Ireland).

**Mary Monro*, H.T. (Pemberton, 1921.) Type, Mme. Caroline Testout. Bud medium size, long-pointed; flower large, full, globular, very lasting; carmine-pink, flushed saffron-yellow; borne, several together, on long, strong stem; fragrant. Foliage abundant, leathery, rich green. Bark and twigs reddish brown; few thorns. Very vigorous; blooms profusely from June to November.

PLATE XVII. HILL'S AMERICA, an American Hybrid Tea Rose to be introduced in 1923. (See pages 24, 132, and 139)

Maud, H.T. (W. Paul & Son, 1921.) Bud coral-red; flower large, well-shaped, salmon-pink. Vigorous, excellent habit; free bloomer all season.

Minnie Saunders, H.T. (Hicks, 1921.) Flower vermilion—does not fade. Branching habit; very free bloomer.

Mrs. Frank J. Usher, H.T. (Dobbie, 1920.) Queen Mary × unnamed variety. Bud medium size, ovoid; flower large, cupped, very double, lasting; orange-yellow, striped red; borne singly on weak stem. Foliage sufficient, large, dark green, disease-resistant. Moderate grower, bushy; profuse bloomer from June to October; hardy.

Mrs. Henry Bowles. See page 145.

Mrs. H. L. Wettern. See page 146.

Mrs. James Williamson, H.T. (Hugh Dickson, 1922.) Flower large, well-formed, very full; clear Enchantress pink, without shading; fragrant. Foliage dark beech-green. Vigorous; free branching; free and continuous bloomer. Gold Medal, Royal Horticultural Society (Ireland) and Scottish Rose Society.

Mrs. Oakley Fisher. See page 145.

Muriel Wilson. See page 145.

**Petrine*, H.T. (Therkildsen, 1921.) Old Gold × Mme. Edouard Herriot. Bud medium size, long-pointed; flower medium size, open, high center, lasting, double; coral-red, shaded chrome-yellow; borne, several together, on long. strong stem; slight fragrance. Foliage large, leathery, glossy, rich green. Many thorns. Very vigorous, bushy, branching; profuse and continuous bloomer; hardy.

**Phœbe.* See page 145.

Portia, H.T. (Bees, Ltd., 1921.) Bridesmaid × Sunburst. Flower medium size, lasting; vivid nasturtium-red and deep shrimp-pink. Very vigorous branching; free-blooming.

Puck, H.T. (Bees, Ltd., 1921.) Lyons Rose × General MacArthur. Flower perfectly shaped; deep, velvety carmine-red; fragrant. Foliage leathery, olive-green, disease-resistant. Vigorous, branching.

Rosa lucens erecta. See page 146.

**Ruth*, H.T. (Pemberton, 1921.) Type, Joseph Hill. Bud large, ovoid; flower large, full, cupped, high-centered, very double, and lasting; orange, flushed carmine; borne singly on strong stem; apricot perfume. Foliage sufficient, medium size, glossy, dark green, disease-resistant. Vigorous, bushy, compact; blooms abundantly from June to November; hardy.

**Sammy*, H.Musk. (Pemberton, 1921.) Bud small; flower semi-single, very lasting; carmine; borne in erect cluster; fragrance slight. Foliage abundant, medium size, glossy, bronze-green. Very vigorous, bushy; profuse bloomer all season; hardy.

Snowflake. See page 145.

Souv. de R. B. Ferguson. See page 146.

**Sovereign*, Per. (B. R. Cant & Son, 1922.) Queen Mary × unnamed seedling. Type, Rayon d'Or. Bud medium size, ovoid; flower medium size, open, cupped, very lasting; deep metallic yellow and old-gold; fruity fragrance. Foliage abundant, medium size, glossy, dark bronze-green, disease-resistant. Vigorous, bushy habit; profuse and continuous bloomer. Card of Commendation, National Rose Society.

Sybil. See page 146.

Venus, H.T. (Bees, Ltd., 1921.) J. Barriot × Sunburst. Bud long-pointed; flower high-centered; rich carmine at the center, paling to warmly flushed cream on the reflexed edges of the petals; fragrant. Vigorous, upright.

Waltham Flame, H.T. (Chaplin Bros., 1921.) Flower deep terra-cotta, shaded with bronzy orange. Very free and continuous bloomer.

W. E. Wallace. See page 146.

GERMANY

Alice Kaempff, H.T. (Felberg-Leclerc, 1921.) General MacArthur × Radiance. Type, Radiance. Bud medium size, long-pointed, pink, with light violet tint; flower large, full, globular, lasting; silvery rose-pink, center coppery yellow; strong fragrance. Foliage sufficient, medium size, glossy, rich green. Vigorous, bushy; free and continuous bloomer.

**Bischof Dr. Korum*, H.P. (Lambert, 1921.) Frau Karl Druschki × Laurent Carle. Bud large, ovoid, red; flower very large, full, cupped, very double, lasting; yellowish rose, with silvery shade; borne singly on strong stem; strong fragrance. Foliage sufficient, glossy, rich green, disease-resistant. Vigorous, upright, bushy; blooms freely in June, July, September and October; hardy.

Camillo Schneider, H.T. (Kordes, 1922.) Lieut. Chauré × Comte G. de Rochemur. Bud very large, long-pointed; flower very large full, double, high-centered, very lasting; clear fiery blood-red; borne singly on long, strong stems; fragrant. Foliage abundant, large, leathery, rich green, mildews slightly. Very vigorous, upright, bushy; profuse and continuous bloomer. Very hardy.

Deutsche Hoffnung, H.T. (Kiese & Co., 1920.) Mme. Caroline Testout × Grossherzogin Feodora von Sachsen. Bud large; flower large; salmon-yellow, passing to apricot-yellow when open; borne singly on long, strong stem. Foliage dark, glossy green, disease-resistant. Vigorous.

Elisabeth Münch, D.Poly. (Münch & Haufe, 1921.) Sport of Orleans Rose. Bud medium size; flower medium size, full; brilliant scarlet-cherry-red, with deeper reflexes. Very vigorous; profuse bloomer.

Felix Brix, H.T. (Brix; intro. by Teschendorff, 1921.) Natalie Böttner × Old-Gold. Flower well formed, with high center; soft rose, suffused with yellow, passing to salmon-rose, base yellow. Foliage disease-resistant. Vigorous, upright.

Flammenrose, H.Lutea. (Türke; intro. by Kiese & Co.) Mrs. Joseph Hill × Mme. Edouard Herriot. Type, Mme. Edouard Herriot. Flower more orange-yellow and more intense than Mme. Edouard Herriot, borne, singly and several together, on long, strong stem. Foliage leathery, disease-resistant.

Frau Felberg-Leclerc, Per. (Felberg-Leclerc, 1921.) Sport of Louise Catherine Breslau. Bud medium size, globular; flower medium size, full, double, cupped, lasting; pure golden yellow; borne singly on good stem; slight fragrance. Foliage sufficient, leathery, bronze-green. Growth moderate, dwarf, branches divergent; profuse and continuous bloomer all season; tips freeze.

Gartendirektor Julius Schütze, H.T. (Kiese & Co., 1920.) Mme. Jules Gravereaux × Pharisäer. Bud large; flower large, finely formed; pale rosy pink and peach-blossom-pink; borne on long, strong stem. Very vigorous.

Gloriosa, H.T. (Kiese & Co., 1920.) Kaiserin Auguste Victoria × Pharisäer. Flower well formed, ivory-white on a yellow base; borne on long, strong stem; strong fragrance. Vigorous.

Hedwig Koschel, D.Poly. (Münch & Haufe, 1921.) Sport of Ellen Poulsen. Flower large, well-formed, very full; pure white, slightly shaded with yellow, edges of petals lightly tinted with rose-pink; fragrant.

Heldengruss, H.T. (Kiese & Co., 1920.) Etoile de France × Baron Girod de l'Ain. Bud large; flower large, very full and double; pure deep blood-red; fragrant. Vigorous, branching. Opens well.

Luise Kiese, H.T. (Kiese & Co., 1921.) Bud long-pointed; flower large, very full; ivory-yellow, sometimes clear yellow on a golden yellow base; fragrant. Beautiful foliage; few thorns. Vigorous.

Ruhm von Steinfurth (Red Druschki), H.P. (Weigand; intro. by Schultheis, 1920.) Frau Karl Druschki × Ulrich Brunner. Type, Frau Karl Druschki. Bud very large, long-pointed; flower very large, full, double, cupped, lasting; pure red, does not "blue;" borne, singly and several together, on long, strong

stem; strong fragrance. Foliage abundant, large, leathery, glossy, dark green. Few thorns. Very vigorous, upright; blooms profusely in June and July and in September and October; hardy. Certificate of Merit, German Florists' Society.

Schleswig-Holstein, Per. (Engelbrecht, 1921.) Sport of Mme. Edouard Herriot. Bud medium size, ovoid; flower medium size, cupped, semi-double, lasting; deep, clear yellow with reddish sheen, turning to lighter yellow; borne, singly or several together, on good stem; fragrant. Foliage sufficient, glossy, rich green, disease-resistant. Vigorous; profuse and continuous bloomer.

S. S. Pennock, H.T. (Kordes, 1922.) Lieut. Chauré × Mrs. George Shawyer. Bud very large, long-pointed; flower very large, double, open, very lasting; light rose-pink, with sulphur-yellow sheen (under glass, clear rose-pink); borne singly on long, strong stems; fragrant. Foliage abundant, large, leathery, wrinkled, rich green, mildews slightly. Very vigorous, upright, bushy; profuse and continuous bloomer; tips freeze.

Vater Rhein, H.T. (Kiese & Co.) Type, Hadley. Bud long-pointed; flower medium size, full; dark red; strong fragrance.

**Von Scharnhorst*, H. lutea. (Lambert, 1921.) Seedling of Frau Karl Druschki × Gottfried Keller. Bud medium size, ovoid, yellow flower; medium size, open, semi-double, lasting; sulphur-yellow, turning to yellowish white with age; borne, several together, on short stem; slight fragrance. Foliage abundant, medium size, glossy, soft, light green, disease-resistant. Very vigorous, upright; blooms profusely in May and June and again in August and September; hardy.

Wilhelm Kordes, Per. (Kordes, 1922) Gorgeous × Adolph Koshel. Bud large, long-pointed; flower large, double, full, high-centered, very lasting; golden yellow, with coppery yellow at edges and on petals exposed to the sun; borne singly on long, strong stems; strong fragrance, like ripe apples. Foliage sufficient, medium size, leathery, glossy, disease-resistant. Vigorous, upright, bushy; abundant and continuous bloomer.

HOLLAND

**Burgermeester Sandberg*, H.T. (Van Rossem, 1920.) Pharisäer × Lady Alice Stanley. Type, Lady Alice Stanley. Bud large, globular; flower very large, cupped, very double, extra lasting; coral-rose; borne singly on medium long, strong stem; fragrant. Foliage sufficient, large, rich green, disease-resistant. Vigorous, bushy, compact; blooms profusely and continuously; hardy. First Class Certificate, Dutch Society of Horticulturists.

**Charming*, H.T. (Van Rossem, 1922.) Seedling of Alexander Hill Gray × Mme. Edouard Herriot. Bud medium size, long-pointed; flower medium size, open, semi-double, lasting; salmon-pink, reverse of petals coral-pink; borne, several together, on average stem; slight fragrance. Foliage abundant, rich green. Very vigorous, bushy, spreading; profuse and continuous bloomer; hardy.

Feu Jos. Looymans, Per. (Looymans, 1921.) Sunburst × Rayon d'Or. Bud very large, long-pointed; flower very large, cupped, very double, lasting; Indian yellow; borne on long, weak stem. Foliage abundant, leathery, dark green, disease-resistant. Vigorous; blooms abundantly and continuously; hardy.

F. L. de Voogd, H.T. (Timmermans, 1920.) Mme. Mélanie Soupert × Mme. Jenny Gillemot. Flower large, semi-double, clear reddish yellow, borne on long, strong stem. Vigorous, branching.

**Geisha*, Per. (Van Rossem, 1920.) Sport of Mme. Edouard Herriot. Bud medium size, long-pointed, orange, marked coral-red; flower large, open, double, lasting; golden yellow; borne, several together, on good stem; slight fragrance.

Foliage sufficient, medium size, glossy dark green; disease-resistant. Many thorns. Vigorous, upright, bushy; blooms profusely all season; hardy. Award of Merit, Dutch Society of Horticulturists and Dutch Rose Society.

**Gooiland*, H.T. (Van Rossem, 1922.) Seedling from Sunburst × Red-Letter Day. Type, Mme. Abel Chatenay. Bud medium size, long-pointed; flower medium size, full, double, very lasting, clear rose-pink, reverse of petals dark coral-rose, borne, several together, on long stems; slight fragrance. Foliage sufficient, medium size, rich green, disease-resistant. Many thorns. Vigorous, bushy, somewhat spreading habit; profuse and continuous bloomer all season; hardy. Award of Merit, Dutch Society of Horticulturists.

Jonkheer Ruis de Beerenbrouck, H.T. (Timmermans, 1919.) Mme. Mélanie Soupert × Joseph Hill. Flower large; full; orange-yellow, with light yellow flush.

Juliana, D.Poly. (Den Ouden & Zoon, 1921.) Sport of Orleans Rose. Flower pale salmon tint, entirely distinct from any in its class. Certificates of Merit from all leading Dutch societies.

Kleine Leo, H.T. (Timmermans, 1921.) Farbenkönigin × General MacArthur. Type, Mevrouw Dora van Tets. Flower large, full, brilliant red shaded dark red. Vigorous; free bloomer.

**Lemon Ophelia*, H.T. (Leenders & Co., 1922.) Sport of Ophelia. Bud very large, long-pointed; flower medium size, double, open, very lasting; lemon-yellow; borne singly; strong fragrance. Foliage abundant, large, leathery, light green. Very vigorous, upright, bushy; profuse bloomer.

Little Joe, H.T. (Looymans, 1921.) Red-Letter Day × H. V. Machin. Type, Red-Letter Day. Bud small, long-pointed; flower medium size, semi-double, lasting; crimson-red; borne, several together, on good stem. Foliage sparse, medium size, glossy, dark green. Poor grower; free and continuous bloomer all season; hardy.

**Ma Fiancée*, H.T. (Van Rossem, 1922.) Seedling from General MacArthur × Red-Letter Day. Type, General MacArthur. Bud medium size, globular; flower medium size, open, double, very lasting; dark crimson, often nearly black (very dark when forced); borne, singly and several together, on good stem; strong fragrance. Foliage sufficient, medium size, leathery, dark green, disease-resistant. Many thorns. Moderate grower, bushy, dwarf; blooms freely from June to September. Award of Merit, Dutch Society of Horticulturists.

Marie Lünnemann, H.T. (Timmermans, 1920.) Pharisäer × Laurent Carle. Bud large; flower large, well-formed, full, delicate pink. Vigorous, branching; free bloomer.

**Miss Henriette Tersteeg*, H.T. (Van Rossem, 1922.) Seedling of Mme. Abel Chatenay × Mrs. Joseph Hill. Type, Mrs. Joseph Hill. Bud large, ovoid; flower large, double, lasting; flesh-color and salmon-pink; borne, several together, on long, strong stem; slight fragrance. Foliage sufficient, large, leathery, bronze-green. Vigorous, bushy; blooms freely and continuously during season; tips freeze. Award of Merit, Dutch Society of Horticulturists.

**Mme. Autrand*, H.T. (Leenders & Co., 1922.) Mme. Caroline Testout × Prince de Bulgarie. Type, Prince de Bulgarie. Bud very large, ovoid; flower very large, full, lasting, coppery orange. Foliage abundant, large, glossy, rich green. Vigorous, bushy; profuse bloomer.

**Mr. Joh. M. Jolles*, H.T. (Van Rossem, 1920.) Frau Karl Druschki × Mrs. Joseph Hill. Bud large, globular; flower large, double, open, lasting; clear creamy yellow, with apricot and golden yellow shadings; borne, several together, on good stem; fragrant. Foliage abundant, large, rich green, disease-resistant. Many thorns. Vigorous, bushy; profuse and continuous bloomer; hardy. First Class Certificate, Dutch Society of Horticulturists.

Secretaris Zwart, H.T. (Van Rossem, 1920.) Seedling of General MacArthur × Lyon Rose. Flower large, very attractive, bright rose, reverse of petals silvery rose. Foliage glossy; disease-resistant. Vigorous; very free blooming. First-Class Certificate, Dutch Society of Horticulturists.

UNITED STATES

Fragrant Bouquet. See page 190.

**Greatheart.* See page 190.

**Mary Wallace,* H.W. (Van Fleet, 1922; to be intro. by American Rose Society.) *R. Wichuraiana* × a pink Hybrid Tea. Bud large, long-pointed; flower very large, cupped, semi-double, lasting; deep rose-pink; borne, several together, on long stem; fragrant. Foliage abundant, rich, glossy green, disease-resistant. Vigorous, climbing (8 to 12 feet;) profuse bloomer in June and September; hardy.

Medina, H.T. (White Bros., 1918; intro. by American Bulb Co. and White Bros., 1923.) Sport of Sunburst. Bud and flower large, white. Habit of growth like Sunburst, but better bloomer.

**Mrs. George C. Thomas,* Climber. (Capt. George C. Thomas, Jr.; intro. by Andorra Nurseries, 1922.) Cl. Mme. Caroline Testout × Moonlight. Bud medium size, ovoid, dark salmon-pink; flower large, open, semi-double, very lasting; salmon-pink, passing to orange at center; borne, singly and several together, on good stem; fragrant. Foliage sufficient, soft, medium size, rich green, quite disease-resistant. Very vigorous, climbing (10 feet), open habit; profuse bloomer (100 to 120 in a season) from May to November; blooms on young and old wood; hardy. Gold Medal American Rose Society; Gold and Silver Medal, Portland Test-Garden. See colored plate, facing page 125.

Mrs. William C. Egan. See page 190.

Silver Wedding. See page 190.

William Wright Walcott. See page 190.

GRAND DUCHY OF LUXEMBOURG

Cl. Mme. Edouard Herriot, Cl.Per. (Ketten Bros., 1921.) Sport of Mme. Edouard Herriot. Like Mme. Edouard Herriot in all respects except that it is a climber. Vigorous; profuse bloomer.

**Evrard Ketten,* H.T. (Ketten Bros., 1920.) Farbenkönigin × Ruhm der Gartenwelt. Bud long-pointed; flower large to medium size, full, double, high centered, very lasting; bright carmine-purple without shading; borne singly on strong stems; strong fragrance. Foliage sufficient, rich green, disease-resistant. Vigorous, upright; profuse bloomer all season. Two Gold Medals.

Mme. Fearnley Sander, Per. (Ketten Bros., 1921.) General MacArthur × Rayon d'Or. Type, Rayon d'Or. Flower very large, full, globular; cochineal-carmine, deepening to carmine-purple, base of petals sunflower-yellow. Foliage abundant, glossy, bronze-green. Vigorous, branching habit; very free bloomer.

Vicomte Maurice de Mellon, H.T. (Ketten Bros., 1921.) Earl of Warwick × Sunburst. Flower large, full, elongated egg shape, double; apricot and yellowish salmon, with coppery reflexes, washed peach-blossom-pink; fragrant. Vigorous, branching; profuse bloomer.

CZECHO-SLOVAKIA

Cechoslavia, H.T. (V. Berger; intro. by A. Berger, 1921.) Pharisäer × Mme. Antoine Mari. Type, Pharisäer. Bud medium size, long-pointed; flower large, full, high-centered, double, lasting; alabaster-white, suffused with salmon-carmine, passing to golden yellow toward the center; borne, singly and several together, on long stem; strong fragrance. Foliage abundant, large, glossy, rich green. Vigorous, upright, bushy; profuse bloomer from June to October. Tips freeze.

Rose Notes

GATHERED BY THE EDITOR

The Editor here calls attention to the importance of these Rose Notes, thus grouped only because their admirable brevity makes it possible to provide much in little. The Notes are the meat of a large rose correspondence.

By reason of the one-pound mailing limitation imposed of financial necessity, much important matter already in type has had to be omitted, to the Editor's deep regret. Some of it will appear in the Members' Handbook, to be issued in September.

Dr. Robert Huey, a Veteran Rosarian.—Those who have full acquaintance with roses know of the pleasing Hybrid Tea which Alex. Dickson & Sons named for one of America's foremost amateurs in 1911. Captain George C. Thomas, Jr., whose intensive hybridizing and testing work has been of such great value to American rose-culture, and who is the author of the best extant American rose book today, attributes much of his success to the suggestions and kindly oversight of Dr. Huey. Opposite page 105, Plate XI records his features for the advantage of the American rose public, the photograph having been obtained by the Editor much against the will of its subject. From Dr. Huey's correspondence, which has been of the greatest helpfulness to the Editor of the Annual, are culled some interesting sidelights, as here follow:

"My earliest rose recollection is of an attempt to pluck a moss rose in my grandmother's garden and of getting my fingers pricked by the sharp thorns. Rescued by the nurse, the thorns were removed, and I was turned loose in the belief that a lesson had been taught. Nevertheless, I wanted that rose, and returned to the attack with a like result. Mother then appeared on the scene, took in the situation, cut the rose, removed the thorns, and made me happy with the flower. I have loved roses ever since.

"Living in the city as a young man, and spending four years in the army during the Civil War, there was no opportunity for attempting a rose-garden, but after being established in practice upon my return, and feeling the need for outdoor relaxation, I purchased a home and two acres of ground in 1877, and began to try to grow roses. There was then little reliable information to be had, and the flowers that resulted compared most unfavorably with the illustrations in the catalogues, while the plants would die by the dozen. Persevering, I finally met with success, and knowing that many others were thirsting for knowledge I began writing and talking of my experiences and how my difficulties were overcome, thus doing a sort of rose missionary work.

"Captain Thomas was so pleased over his success with a bed of fifty roses which I had given him that he got the rose fever too, and he has surely done splendid work since, making me very proud of my pupil."

One of Dr. Huey's friends tells of his kindly aid in always answering inquiries about roses and in publishing records when any noteworthy information had been obtained. He first heard of budded roses through Messrs. Alex. Dickson & Sons, the great Irish rose-growers, and his trial of these was really the beginning of a new era in outdoor rose-growing in America In 1898 his friend Alexander Scott gave him three plants of Killarney, and these were the first plants of this rose planted outdoors in America. The original plants were still doing well in 1918, when war changes connected with the establishment of the Hog Island shipyard put the Doctor out of his rose-garden Many new roses have had their first American trial in Dr. Huey's garden, where they would always have the best care and his enlightened and critical judgment.

In the 1917 Annual (page 47) Dr. Huey described and illustrated "Propagation by Budding," particularly as applied to the Japanese Multiflora stock, which he has found superior for the Middle States.

Rose Importations into the United States.—Heretofore careful account has been given of the amount of roses and rose stocks imported into the United States, as recorded by the Federal Horticultural Board. Importations are now controlled by this body, and while the entry of rose stocks is freely permitted, the admission of "finished" roses—that is, of roses budded or grafted or grown on their own roots to definite varieties—is sharply restricted, it being the idea of the Federal Horticultural Board, in the first place, that it must be the judge of the value of a new variety offered abroad, and in the second place that this new variety must come to a commercial concern or to an experiment garden, public or private, and may not properly be imported by an individual rosarian.

The permit which must be obtained prior to importation enforces the providing of a bond which in effect makes it necessary for the importer to follow for a considerable time the plants so imported, and all of the regulations tend toward the material reduction, if not the complete prevention, of importations of new varieties by amateurs accustomed heretofore to experiment with them.

The Editor does not here discuss the propriety of these regulations, though he does emphatically state his belief in the desirability of a sane and reasonable quarantine to prevent the introduction into the United States of additional insect pests and diseases. It is in point at this time merely to state the facts.

The information provided on page 167 of the 1921 Annual was supplied by Mr. R. Kent Beattie, Pathologist in Charge of Foreign Plant Importations, of whom a similar request was made on January 5, 1922. No attention being paid for more than a month, recourse was had to his chief, Dr. C. L. Marlatt, who has furnished the following information:

For the fiscal year of 1920, ending June 30, 31 permits were issued, authorizing the importation of 5,846 rose plants. Of these permits 19 were used, with a total importation of 2,147 plants.

For the fiscal year of 1921, ending June 30, 50 permits were issued, authorizing the importation of 38,787 plants. Importations occurred under 35 of these permits, of a total of 34,774 plants.

From July 1, 1921 to January 15, 1922, 54 permits were issued authorizing the importation of 9,009 roses. To February 9 importations had occurred under 13 of these permits, of 2,174 plants, it being assumed that most of the importations for the fiscal year ending June 30, 1922, will be made later.

The total for the approximation to a three-year period to January 15, 1922, was 135 permits issued for importing 53,642 plants, on which 39,095 plants were actually imported under 67 permits.

No information was supplied as to the importation of rose stocks for the fiscal year of 1921. The importation for the preceding year, as reported on page 167 of the 1921 Annual, was 3,514,636 rose stocks.

Testing Rose Stocks.—It is most encouraging to report that the Bureau of Plant Industry of the United States Department of Agriculture is undertaking a comprehensive program of testing in various parts of the country, to determine the most available rose stocks. Information comes from Dr. B. T. Galloway, Plant Pathologist in the Department, outlining a program which includes the testing, not only of the familiar stocks in comparison, but the following-up of the late lamented Dr. Van Fleet's suggestions as to the use of many other possibilities in trial. In addition to the tests reported elsewhere as going on at Arlington, arrangements have been made to continue the work at Chico, Calif., at Bellingham, Wash., as well as at Bell Station, near the Capital City. Reports may be expected next year on these trials. (See also page 122.)

W. B. Burgoyne, a Great Rose-Citizen, Gone.—In October of 1921 the Editor made a motor pilgrimage to Toronto. On the return trip, a stop was made to visit an old rose and civic friend at his home in the beautiful little city of St. Catharines, barely a dozen miles beyond Niagara's roar. This friend, who had been recently Mayor of his city, who had built for it and the surrounding county a wonderful concrete road, who kept burning the torch of civic pride and progress through his daily newspaper the *St. Catharines Standard,* took great pleasure in showing us the "Anniversary Rose-Garden," described on page 24 of the 1919 Annual, which he had given to his city. Indeed, because he was a true rose-lover, with roses in his heart, he was also able to find for us some roses yet defying the frost in this garden.

In early January came the sad news of his sudden death. All America has lost a good citizen and although his thoughtful provision will sustain his municipal rose-garden, it will not be the same without its cheerful donor. His friend and associate, Dr. F. E. Bennett of St. Thomas, Ont., writes thus in sympathy:

W. B. Burgoyne is dead! Dead, did we say? No, he liveth. The busy life that the departed lived on earth has been of untold value to the people of Canada. Rarely do we meet a man whose activities were so numerous and of such an uplifting and constructive nature, whether in municipal matters or in horticulture, but of these many activities we will dwell upon only one—his love of flowers.

In the formation of the Ontario Horticultural Society and of the St. Catharines Horticultural Society he was a leading spirit. The latter organization, through his leadership, has held a premier position in Provincial circles. His kindly advice was much sought after. As a public benefactor one of his finest gifts was that of a municipal rose-garden to his beloved city, the rose being his favorite flower, and the annual rose show of the St. Catharines society being an event of importance.

Our departed friend never let an opportunity pass to spread the gospel of flowers. He was a grand man and died fighting for human advancement, conscious to the last minute. He gave a farewell message, bade all goodbye, and passed into life eternal.

The Verdict of our Members on Best Varieties.—The cards sent out with the Members' Handbook in September, asking "What roses have done best for you in 1921?" "What roses are doing best for you now this fall?" and "What have been your rose troubles?" brought a very large and interesting response. The pressure of the very things asked for by the members in their responses during the year makes it impossible in the Annual to give a full account of what the members have said.

There was a very definite urgency for information as to combating blackspot, mildew, and insects, for which reason the last word on this subject is printed in this Annual.

The card information as to which roses had done well in 1921 gave the data concerning 208 different roses, in all the classes, from which there is room here to present only the merest summary.

Radiance seems to have taken the place of Ophelia as the most popular Hybrid Tea in the New England, Middle, and Southern States, Ophelia being second. In the Central states, Gruss an Teplitz stands first, with Ophelia second. The Pacific Coast states do not locate on any one variety, though Hoosier Beauty, Golden Emblem, Lady Pirrie, and Ophelia rank high.

In the Hybrid Perpetual class, Frau Karl Druschki still holds first place in all localities, with George Arends and General Jacqueminot coming next.

Among hardy climbers, Dr. W. Van Fleet is overwhelmingly first, followed by American Pillar, Silver Moon, Climbing American Beauty and Dorothy Perkins. Thus it will be seen that American-bred roses are found best in America.

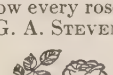
For 1922 the Editor wants additional information as to the best varieties in various localities, it being his hope to present a definite selection next year.

PLATE XVIII. The Crimson Hybrid Tea Rose, FRANCIS SCOTT KEY
(Originated by John Cook, 1913. See Rose Note on page 162, by Wallace R. Pierson.)

What are the "Best" Roses?—It's mighty hard to decide! For instance, I would never be without Ophelia, although it is only notable for its wondrous form and color. With me, its fragrance is negligible, it is stingy with its blossoms, is a lean and gawky bush, and regularly freezes to the ground each winter; in spite of these defects which also damn numerous other beauties in my sight (Lady Alice Stanley, for example), I still would grow Ophelia, if I had to plant new ones every spring.

As a matter of personal preference, disregarding the cold-blooded facts, I believe my preference list would run about as follows: Willowmere, Ophelia, Mrs. Aaron Ward, Gruss an Teplitz, Mme. Leon Pain, Killarney, Chateau de Clos Vougeot, Lady Ursula, Radiance, Mme. Caroline Testout, George Dickson, Mrs. John Laing, Frau Karl Druschki, Ulrich Brunner, Captain Hayward, Dr. W. Van Fleet, Tausendschön, Christine Wright, Dorothy Perkins, Excelsa.

The reasons for this somewhat eccentric list are, to a great degree, a matter of personal taste, and have little to do with the actual merits of the roses. George Dickson is, perhaps, the most worthless of roses—I scarcely ever get more than two or three perfect flowers a year; but when they do come! Well, "Oh boy!" While I don't actually dislike Radiance and Mme. Caroline Testout, I include them in this list only because they are obviously so much better roses than others which I like better. I don't like single, semi-double, or "thin" roses in Hybrid Teas; I dislike roses the color of Mrs. A. R. Waddell, Betty, and such other dirty pinks and impure yellows; I have it in for roses with the disreputable blooming habits of Rayon d'Or and Los Angeles. The latter, in spite of high praise elsewhere, has been a total failure with me, as it refuses obstinately to grow, sheds its leaves three times a year, and is very shy in blooming, although I will admit that what flowers I got were perfect, gorgeous in color and perfume, but small. Willowmere is so much superior in every way except color that there is no comparison. However, being a rose-grower yourself, you will understand that these "dislikes" are merely relative for I love them all, and if I had the time, the money, and the place, I think I would grow every rose that ever existed as well as some that are to exist in the future.—G. A. Stevens, *Cleveland, Ohio.*



Roses in Front Dooryards.—Mr. David M. Dunning, the Auburn (N. Y.) rose-grower who attains such notable results outside the Rose-Zone Map's scope, suggests the importance of urging people to plant roses in their front dooryards, as well as in the private grounds in the rear. Why not? A good climber over the door; a fine Rugosa, a lovely Hugonis, three or four of the constant-blooming Polyanthas, will excite pride and improve citizenship, if half the people in any block will put them in the public eye. If the farmer's wives (farmers themselves seem to care little for flowers!) along the highways would do the same, what a rose-change would occur!

The Rose William F. Dreer, a picture of which, as it bloomed for the Editor, is in Plate XII, facing page 112, is a Howard & Smith production sent out in 1920. In shape and habit it is much like Los Angeles and Miss Lolita Armour, but in coloring it is unique in its combination of soft pink and golden yellow, mingled and overlaid in a way to make description difficult. It seems a worthy member of the Howard family of fine roses, each entirely distinct in coloring.

The Red Rose, Francis Scott Key. —To the Editor's inquiry, "Why has Francis Scott Key come back?" the following answer is made:

"No, Mr. McFarland, Francis Scott Key has not 'come back.' The fact is, it has never been away! A big rose, such as this, is not the real rose of commerce that Columbia, Premier, Mme. Butterfly, and Pilgrim can be—it doesn't bloom freely enough. It grows very slowly in winter, and can never be anything but a 'premium' rose. By that I mean a rose that must sell at a great advance in price over the other varieties mentioned. American Beauty has been dropping from the market, and Francis Scott Key has advanced in proportion to the drop in American Beauty.

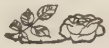
"There has been one other element which enters into its popularity, and that is the publicity given this rose at the big New York flower shows—and to the F. R. Pierson Company belongs the credit of bringing this rose into prominence. Those who have seen the wonderful flowers of Francis Scott Key at these shows have recognized real merit, and, while it may never be widely grown and never be the flower of the masses, it ranks at the top of the 'premium' roses, and the specialty growers who grow it will find it profitable.—Wallace R. Pierson."

Sensible Ideas about Pruning Roses.—In some very pointed comments on queries made of the Editor, as reported on page 79 of the 1920 Annual, Mr. David Lindbloom, of Bridgeport, Conn., writes: "If you will walk into a neighbor's garden and look at some neglected rose bush of his (generally a "Jack" rose—all red roses are "Jack" roses to some people), a mere glance will tell you what is most needed in the line of pruning. You will always find some wood that has been dead for years, and some that is outlived and soon will be dead. Much of the bush is composed of a lot of small twigs that are too weak to produce flowers. A few real live shoots of a healthy green hue are likely to be found. Keep only them, and if a plant is well fed such new healthy green shoots will appear every year. Shorten them a little, and if they are very long and sturdy, bend them over in a half circle, pegging the end to the ground. After a while you will learn more from experience than from any amount of illustrated writing." The Editor is moved to add that Mr. Lindbloom's suggestions apply particularly to the Hybrid Perpetual and Moss roses and to the Rugosa hybrids.

A Rose of Memory.—Mrs. Moses Lyman, of Longmeadow, Mass., a sister of the lamented Dr. W. Van Fleet, America's great worker with roses, answers the Editor's query as to favorite old-time roses when she writes, "Brother and I used to play in a summer-house up in the West Branch valley of the Susquehanna River in good old Pennsylvania, not far from Williamsport. The summer-house was covered with Baltimore Belle. I still love that fragrant pink climbing rose, and I love the farm where we lived."

Frau Karl Druschki by the Acre.—The returns from our members show that "Druschki" is the most popular Hybrid Perpetual rose all over America. A new source of production appears in Florida, where roses are grown to remarkable vigor in a short time. Plate IX, facing page 73, shows a field of this great rose growing in January, 1922, at Glen St. Mary, Fla. Concerning it, Mr. Hume writes that the bloom was rather past when the photographer visited him!

Double-Duty Roses Again.—On page 132 in the 1919 Annual we read "Climbing Roses Doing Double Duty." I have tried the same stunt, but as I could not afford to cut off the shoots above the point of budding, did not get the desired result, as the shoot grew in circumference and its bark soon covered the inverted bud and choked it to death. But on Climbing American Beauty I had better results, as its shoots do not grow to such size, even though they reach great lengths. Buds of hardy Hybrid Perpetuals will remain dormant until the blooming period of the plant is over the following summer, when you cut the shoot, thereby throwing the strength into the bud, which grows that year and blooms the next as a bush would. A bud of the J. B. Clark refused to remain dormant, but took full charge of the parent shoot and has grown four feet long this summer, although I pinched off the tip once to make it bushy. Thus I will have J. B. Clark, Conrad Ferdinand Meyer, and Ulrich Brunner on one bush, together with Climbing American Beauty.—David Lindbloom, Southport, Conn.



To Get Hardy Roses.—Mr. James Boyd, of Haverford, Pa., a member of the Executive Committee of the American Rose Society, suggests to hybridizers the use of *Rosa setigera* in combination with *R. odorata* of the Noisette forms. He also proposes that *R. palustris* and *R. virginiana* might be used as parents for the hardier and better roses for the American climate, citing the portions of the Rose-Zone Map which show the worst climatic relations as the need for this sort of hybridization.

"Hame o' Roses."—A member of the American Rose Society living in Hudson, Ohio, wrote the Editor on a correspondence card which was headed "Rosehame." The Editor's curiosity led him to inquire the reason for this name, whereupon Mr. Dodds courteously gave the following explanation:

"The name 'Rosehame' was given to our home because we had so many roses in the yard. We found in reading 'The Lovable Meddler' an account of an old Scotchman who called his place 'Hame o'Roses,' but as this was somewhat too long we readjusted it to the United States standard and called it 'Rosehame.' Up to last fall we had about 500 rose bushes, but lost about 125 on account of the severe weather in this locality."

A society, the members of which are so devoted to its object as to act thus, is surely worth while.

The Hardiness of Gruss an Teplitz.—A rose-loving preacher who has moved some of his favorites to a new home in central Iowa, where the breezes blow and the frost freezes, states that while other roses had hard luck through the bad winter of 1920, Gruss an Teplitz came through "with little protection and is growing strongly and vigorously." Here is definite hardiness in a hard-luck climate.

A Live Rose Society in Rochester.—That grand old man in rose-growing, Dr. E. M. Mills, of Syracuse, was the main instrumentality in the establishment of the Rochester Rose Society, which signalized its second year of existence by a very notable show held June 13 and 14, 1921, in the beautiful New York city of its home. Genuine interest in the rose is manifested in Rochester.

Official List of Roses Introduced in America

Compiled by CHARLES E. F. GERSDORFF

(Corrected in this Seventh Edition to February 21, 1922)

EDITOR'S NOTE.—Begun in 1916 in a sincere endeavor to bring order out of confusion, to give credit where it was due, and to prevent the duplication of names, this list has been painstakingly extended and revised by Mr. Gersdorff until it is now believed to be substantially accurate, and to be properly therefore an "official" list.

The Editor will be glad to transmit to Mr. Gersdorff any corrections or additions which will tend to make this list more complete. The makers of catalogues are urged to accept the nomenclature here presented as authoritative and accurate.

This list is identical, so far as American introductions are concerned, with the list of roses published in the new Official Catalogue of Standardized Plant Names, issued in 1922 by the American Joint Committee on Horticultural Nomenclature, and undoubtedly to be used as authority in all plant transactions until a later edition is required and compiled. (This important catalogue can be obtained by addressing Harlan P. Kelsey, Secretary, Salem, Mass. The price is $5.)

Steps are being taken, also, to work in harmony with the European authorities represented in the International Bureau for the Registration of Horticultural Novelties, as formed at an important meeting held May 24, 1921, in London, and elsewhere discussed in this Annual.

This revision of form of presentation of the list has been made at the suggestion of the Editor, in order to make it possible readily to follow the work of any originator or introducer. Each citation under reference 15, of the Lists presented in the past, where the information was still available, have been given separate reference numbers as 15, 15a, etc. This was done at the suggestion of several of our members. These references will not be published again, having stood unchallenged to date and therefore having served their purpose.

☞ *The publication of this list serves as notice in respect to names attached to roses of American origin. Duplications in later introduced varieties are inadmissible, and the American Rose Society has announced that it will not register any such duplications.*

ABBREVIATIONS

The abbreviations used are: A.B. (Austrian Briar), Arv. (Arvensis), B. (Bourbon), B.-C. (Bourbon-China), Ben. (Bengal), Ben.-C. (Bengal-China), C. (China), Cl.B. (Climbing Bourbon), Cl. H.T. (Climbing Hybrid Tea), Cl. T. (Climbing Tea), Cl. H.P. (Climbing Hybrid Perpetual), D. (Damask), H. Ben. (Hybrid Bengal), H. Ben.-T. (Hybrid Bengal-Tea), H.Cl. (Hardy Climber), H.D. (Hybrid Damask), H.Mult. (Hybrid Multiflora), H.N. (Hybrid Noisette), H.P. (Hybrid Perpetual), H. Ramb. (Hybrid Rambler), H. Rug. (Hybrid Rugosa), H. Set. (Hybrid Setigera), H. Spin. (Hybrid Spinosissima), H.T. (Hybrid Tea), H.T.-Poly. (Hybrid Tea-Polyantha), H.W. (Hybrid Wichuraiana), H.W.-Rug. (Hybrid Wichuraiana-Rugosa), Læv. (Lævigata), Læv. Hyb. (Lævigata Hybrid), Mult. (Multiflora), N. (Noisette), Per. (Pernetiana), Poly. (Polyantha), H.Poly.-Ayr. (Hybrid Polyantha-Ayrshire), Prov. (Provence), Ramb. (Rambler), Semp. (Semperflorens), Set. (Setigera), T. (Tea), W. (Wichuraiana), A. R. S. (American Rose Society), S. A. F. (Society of American Florists).

REFERENCES

The number at the end of each description on the following pages refers to the sources considered in the list below. When two or more numbers follow, the rose has been described in each of the sources cited. After this issue, these references will not appear again.

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2. Beautiful Roses, by John Weathers. 1903.
3. Roses and Rose-Growing, by Rose G. Kingsley. 1908.
4. New Roses, by Rose G. Kingsley. 1913.
5. Société Nationale d'Horticulture de France, Section des Roses, Les plus belles roses au debut du XX siecle. 1912.
6. Les roses, etc., by Shirley Hibberd. 1882.
7. Parsons on the Rose, by S. B. Parsons. 1869 and 1910.
8. The Book of Roses, by Francis Parkman. 1866.
9. The Amateur Gardeners' Rose Book, by Dr. Julius Hoffman; translation by John Weathers. 1905.
10. The Rose Manual, by Robert Buist. 1854.
11. List of Roses, by Brougham and Vaux. 1898.
12. Concours international de roses nouvelles a Bagatelle. 25 juin, 1908.
13. Catalogue de la roseraie de Bagatelle. 1913.
14. Roses and Their Culture, by W. D. Prior. 1892.
15. Catalogues California Rose Co., Los Angeles, Cal., 1914–19.

15*a*. Catalogues J. T. Lovett, Little Silver, N. J., 1914–18.
15*b*. Catalogues M. H. Walsh, Woods Hole, Mass., to 1917.
15*c*. *The Farm Journal*, Philadelphia, Pa., 1918.
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15*f*. Correspondence with John Lewis Childs, Floral Park, N. Y., 1919.
15*g*. Correspondence with Dingee & Conard Co., West Grove, Pa., 1918.
15*h*. Catalogue Glen Saint Mary Nurseries, Glen Saint Mary, Fla., 1917.
15*i*. Catalogue Howard Rose Co., Hemet, Calif., 1915.
15*j*. Catalogue Storrs & Harrison Co., Painesville, Ohio., 1915.
15*k*. Catalogues of Good & Reese, Springfield, Ohio., 1915–17.
15*l*. Catalogue Alex. Dickson & Sons Ltd., Newtownards, Ireland, 1910–12.
15*m*. Catalogue of Luther Burbank, Santa Rosa, Calif., 1913.
15*n*. Catalogues A. N. Pierson, Inc., Cromwell, Conn., to 1917.
15*o*. Catalogues E. G. Hill Co., Richmond, Ind., 1915–17.
15*p*. Catalogue Heller Bros., Newcastle, Ind., 1910.
15*q*. Catalogue Jackson & Perkins Co., Newark, N. Y., 1916–17.
15*r*. Catalogue F. R. Pierson, Tarrytown, N. Y., 1911.
15*s*. Catalogue or correspondence Peter Henderson & Co., New York, N. Y., 1910.
15*t*. Advertisement in *The American Florist*, 1918.
15*u*. Correspondence R. & J. Farquhar & Co., Boston, Mass., 1919.
15*v*. Correspondence Iowa Experiment Station, Iowa, 1918 or 1919.
15*w*. Correspondence McGregor Bros., Springfield, Ohio, 1918.
15*x*. Correspondence and verbally, U. S. Department Agriculture, Washington, D.C., 1918.
15*y*. Catalogue Fancher Creek Nurseries, Fresno, Calif., 1917.
15*z*. Catalogue J. Van Lindley Nurseries, Pomona, N. C., 1917.
15*aa*. Catalogue Ellwanger & Barry, Rochester, N. Y., 1917.
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15*cc*. Report in *The Florists' Exchange*, 1919.
15*dd*. Advertisement in *The Florists' Exchange*, 1920.
15*ee*. Catalogue Elliott Nursery, Pittsburgh, Pa., 1917–18.
15*ff*. Catalogue Western Rose Co., Pasadena, Calif., 1918.
15*gg*. Correspondence Biltmore Nurseries, Biltmore, N. C., 1913.
15*hh*. Verbally, Gude Bros., Washington, D. C., 1916.
15*ii*. Correspondence R. Witterstaetter, Cincinnati, Ohio., 1917.
15*jj*. Catalogue Vaughan's Seed Store, Chicago, Ills., 1916.
15*kk*. Catalogue Julius Roehrs Co., Rutherford, N. J., 1917.
15*ll*. Catalogue Hoopes Bros. & Thomas Co., Philadelphia, Pa.
15*mm*. Correspondence Edw. Towhill, Roslyn, Pa., 1920.
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15*pp*. *The Florists' Exchange*, Sept. 3, 1921.
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31. Eastern Nurseries, Inc., Holliston, Mass. 1918.
32. *The Garden Magazine*, October, 1918.
33. R. & J. Farquhar & Co., Boston, Mass.
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☞ Varieties believed to be in commerce are in SMALL CAPITALS; varieties no longer in commerce are marked with †; names of originators and introducers are in CAPITALS.

ABUNDANCE, Poly. (Henderson, 1910.) Clotilde Soupert × Souv. du President Carnot. 25.

ADAM RACKLES, H.T.† (Rommel, 1905.) 45.

ADMIRAL DEWEY, H.T. (Taylor, 1899.) Sport from Mme. Car. Testout. 15, 19.

ADMIRAL EVANS, H.T.† (E. G. Hill Co., 1907; not formally introduced.) 5, 13. Liberty × unnamed seedling. 12.

ADMIRAL SCHLEY, H.T. (J. Cook, 1901.) Colonel Joffe × General Jacqueminot. Received Bronze Medal at Pan-American Exposition. 19.

AGNES EMILY CARMAN, H.Rug. (Carman, 189–.) *R. rugosa* × Harison's Yellow. 29.

ALBA RUBRIFOLIA, H.W. (Van Fleet, 1898; intro. by Conard & Jones Co.) Wichuraiana hybrid.

ALICE ALDRICH, H.Rug. (J. T. Lovett, 1899.) 15*a*. *R. rugosa* × unknown Tea or Hybrid Tea.

ALICE LEMON, H.T. (E. G. Hill Co., 1911.) Mme. Philippe Rivoire × Paul Neyron. 25.

ALIDA LOVETT, H.W. (Van Fleet, 1905; intro. by J. T. Lovett, 1917.) *R. Wichuraiana* × Souv. du President Carnot. 15*a*.

ALICE OF INGLESIDE, H.T.† (Briggs, 1910.) 42.

AMARANTE, B.† (Page, 1859.) 45.

AMERICA, Mult. (Walsh, 1915.) 29.

AMERICA, N.† (Page, 1859.) 8, 16.

AMERICA, H.Rug.† (Garden, Harvard University, 1894.) 5.

AMERICA, H.T.† (E. G. Hill Co., 1902.) 45. *See also* Hill's America.

AMERICAN BANNER, T.† (Cartwright, 1877.) 1, 17. Sports of Bon Silene. 16.

AMERICAN BEAUTY, H.P. (Imported by Bancroft, 1886.) Syn. Mme. Ferd. Jamain, as which it seems to have been introduced in France by Ledéchaux, 1873. 3, 17, 19. (Intro. to the trade in America by Field Bros.) 16.

American Belle, H.P.† (J. Burton, 1893.) Sport from American Beauty. 19.
American Pillar, H.W. (Van Fleet, 1902; intro. by Conard & Jones Co.) *R. Wichuraiana* × *R. setigera.* 19.

AMERICAN ROSE CO. *See* Miss Alice Roosevelt, H.T.†; Ivory, T.
American Seedling, H.T.† (Bisset, 1904.) 45.

AMLING CO., ALBERT F., Maywood, Ills. *See* Silver Wedding, H.T.
Amœna, Læv. (Hockbridge, 1909.) 15.
Angelus, H.T. (F. H. Lemon & Co., reg. A. R. S., 1920.) Columbia × Ophelia.
Anna Maria, H.Set. (Feast, 1843.) 1, 13, 19. Syn. Anna Marie. 15*oo*.
Annie Cook, T.† (J. Cook, 1888.) 1. Seedling from Bon Silene. 17.
Apple Blossom, Mult. (Dawson, 189–; intro. by Eastern Nurseries.) 29. Dawson × *R. multiflora.* 31.
Apple Blossom, Poly. (Schultheis, 1908.) 26.
Arcadia, H.W. (Walsh, 1913.) 15*b*.
Arnoldiana, H.Rug. (Dawson, 1914.) *R. rugosa* × General Jacqueminot. Syns., Arnold; Dawson's Hybrid Rugosa.
Atlas, H.T.† (E. G. Hill Co., 1903.) 19. (1902.) 45.
Augusta, N. (1853.) 1. Seedling from Solfatare. 8.
Augustine Guinoisseau, Jr., H.T. (California Rose Co., 1911.) Sport of Augustine Guinoisseau. 15, 30.
Aunt Harriet, H.W. (Van Fleet; intro. by *Farm Journal* of Philadelphia, 1918.) Apolline × *R. Wichuraiana.* 15*c*.
Aurora D'Enghien, Prov.† (Feast.) 45.
Babette, H.W. (Walsh, 1908.) 15*b*, 19.
Baltimore, H.T. (J. Cook, 1898.) Mme. Antoine Rivoire × Mary Fitzwilliam. 42.
Baltimore Belle, Set. (Feast, 1843.) 10, 19.

BANCROFT,——. *See* American Beauty, H.P.
Beacon Belle, H.Poly.-Ayr. (R. & J. Farquhar & Co., reg. A. R. S., 1919.) Orleans × (Katharina Zeimet × an old Ayrshire rose.) 33, 15*u*.
Beauty of Greenmont, H. Set.† (Pentland, 1854.) 16.
Beauty of Greenwood, N.† 17.
Beauty of Rosemawr, B. (Conard & Jones Co., 1903.) 15*d*, 19.
Beauty of the Prairies, Set. (Feast, 1843.) 13, 19. Syns. Queen of the Prairies, Prairie Queen, 10; Feast's No. 1, Mme. Caradori-Allan, 22.

BECKER, JACOB. *See* Ideal, H.T.
Bedford Belle, H.T.† (Bedford Flower Co., reg. 1916.) 15*oo*. Sport from Double White Killarney.

BEDFORD FLOWER CO., Bedford Mass. *See* Bedford Belle, H.T.†

BELL, MRS. CHARLES, Twin Oaks, Washington, D.C.
See Mrs. Charles Bell, H.T.

BELL & SON, Philadelphia, Pa.
See Catherine Bell, H.P.†; General von Moltke, H.P.†; Mrs. Opie, T.†

Belle Americaine, H.P.† (D. Boll, 1837.) 1, 16, 17.
Belle of Washington, H.T.† (Field Bros., 1904.) 45.
Belle Portugaise, H. (?).† (Franceschi.) *R. moschata* × *R. odorata gigantea.* 34.
Bess Lovett, H.W. (Van Fleet, 1905; intro. by J. T. Lovett, 1917.) 15*a*.
Betty Alden, H.Poly.-Ayr. (R. & J. Farquhar & Co., reg. A. R. S., 1919.) Orleans × (Katharina Zeimet × an old Ayrshire rose). 33, 15*u*.
Birdie Blye, Mult. (Van Fleet, 1904; intro. by Conard & Jones Co.) Helene × Bon Silene. 19.

BISSET,——. *See* American Seedling, H.T.†

Bloomfield Abundance, H.T. (Capt. George C. Thomas, Jr., reg. A. R. S., 1920; intro. by Bobbink & Atkins and A. N. Pierson, Inc., 1920.) Sylvia × Dorothy Page-Roberts.

Bloomfield Perpetual, H.P. (Capt. George C. Thomas, Jr., reg. A. R. S., 1920; intro. by Bobbink & Atkins, 1920.) Iceberg × Frau Karl Druschki.

Bloomfield Progress, H.T. (Capt. George C. Thomas, Jr., reg. A. R. S. 1920; intro. by Bobbink & Atkins, 1920.) Mary, Countess of Ilchester × General MacArthur.

Blush Maryland, H.T.† (Totty, 1912.) Sport of My Maryland. 15*e*.

Blush Noisette, N.† (Noisette, 1817.) Seedling of Champney's Pink Cluster. 2, 16. Syns., Noisette de l' Inde; Old Blush.

BOBBINK & ATKINS, Rutherford, N. J.
See Bloomfield Abundance, H.T.; Bloomfield Perpetual, H.P.; Bloomfield Progress, H.T.; Dr. Huey, H.W.

BOLL, D., New York, N. Y.
See Belle Americaine, H.P.†; Mme. Boll, Portlandica.†; Mme. Boll, H.P.†; Mme. Trudeaux, H.P.†; Mme. Trudeaux, D.†; Pretty American (*R. Lawrenciana.*)†; Souv. de Henry Clay, Scotch Hybrid.†

Bonnie Belle, H.W. (Walsh, 1911.) 25.

Bonnie Prince, H.W. (Thomas N. Cook, reg. A. R. S., 1918.) Tausendschön × unnamed seedling.

Boston, H.T. (Montgomery Co., reg. A. R. S., 1917.) Mrs. Geo. Shawyer × Montgomery seedling.

Boston Beauty, H.Poly.-Ayr. (R. & J. Farquhar & Co., reg. A. R. S., 1919.) Orleans × (Katharina Zeimet × an old Ayrshire rose). 33, 15*u*.

BOWDITCH, JAMES H. *See* Rosa hybrida Max Graf, Hybrid.

BRAGG,——. *See* Brighton Beauty, T.†

BRANDT-HENTZ CO., Madison, N. J. *See* Madison, T.

BREITMEYER FLORAL CO., Mount Clemens, Mich.
See Canadian Queen, H.T.†; La Detroit, H.T.; Pink Ophelia, H.T.

BREITMEYER'S SONS, JOHN, Detroit, Mich.
See Canadian Queen, H.T.†; La Detroit, H.T.; Pink Ophelia, H.T.

BREITMEYER'S SONS, PHILLIP, Detroit, Mich.
See Mrs. Potter Palmer, H.T.†; Rose-Pink Ophelia, H.T.

Bridal Wreath, H.W.† (Manda, 1909.) 37.

Bride, T. (May, 1885.) 19. Sport from Catharine Mermet. 16. Syn., The Bride. 15*oo*. Syn. La Fiancee. 1.

Bridesmaid, T. (Moore, 1892.) 19. Sport from Catherine Mermet. 16. Probably identical with The Hughes. 16.

BRIGGS, S. C., Washington, D. C. *See* Alice of Ingleside, H.T.†

Brighton Beauty, T.† (Bragg; intro. by May, 1891.) 16, 17.

BRUNELL, F. H.,——, Ala. *See* Marion Brunell, Cl.T.

BYRANT,——. *See* Mexico, H.P.†

BUDD, J. L., Iowa Experiment Station, Iowa. *See* Hansen, H.Rug.

BUDLONG & SON CO., J. A., Auburn, R. I.
See Double White Killarney, H.T.; Killarney Queen, H.T.; Mrs. Belmont Tiffany, H.T.

BUIST, ROBERT, Philadelphia, Pa.
See Cora L. Barton, N.†; Hibbertia, C.†; Jacksonia, C.†; Lutea, N.†; Mme. Byrne, N.†

Buena Vista, B.† (Page, 1859.) 45.

Bunker Hill, B.† (Page, 1859.) 45.

Burbank, Ben. (Burbank; intro. by Burpee, 1898.) 5, 42. Armosa (Hermosa) × seedling of Bon Silene. 15*m*, 19.

BURBANK CO., LUTHER, Santa Rosa, Calif.
See Burbank, Ben.; Corona, Mult.; Improved Rainbow, T.; Santa Rosa, H.Ben.-T.

BURGESS,——. *See* Mrs. de Graw, B.

BURGESSE,——. *See* Gem of the Prairie, Set.†

BURPEE, W. ATLEE, Philadelphia, Pa. *See* Burbank, Ben.

BURTON, JOHN, Wyndmoor, Philadelphia, Pa.
See American Belle, H. P. †; Thora, H. T.

BUTLER, THOMAS, Philadelphia, Pa. *See* Climbing Wootton, Cl. H.T.

Buttercup, Cl.T. (California Rose Co., 1908.) 15. Seedling of unknown parentage. 30.

BYRNES, EDW. M., U. S. Department of Agriculture, Washington, D. C.
See Edwin F. Smith, H.T.; Helen Taft, H.T.; Mrs. B. T. Galloway, H.T.; Mrs Brook E. Lee, H.T.; Mrs. W. A. Taylor, H.T.; Wm. Saunders, H.T.

California, H.T. (Howard & Smith, reg. A. R. S., 1916.)

CALIFORNIA ROSE CO., Pomona, Calif.
See Augustine Guinoisseau, Jr., H.T.; Buttercup, Cl.T.; Climbing Helene Cambier, H.T.; Climbing Hugh Dickson, H.P.; Climbing Rainbow, T.; Climbing Rhea Reid, H.T.; Climbing Winnie Davis, T.; Etoile de France, Jr., H.T.; Golden Trophy, Cl.T.; King David, H.P.; Lady Mars, Cl.T.; Miss Maudy Shubrook, H.T.; Miss Ruby Dent, H.P.; Oriole, H.T.; Pink Frau Karl Druschki, H.P.; Satisfaction, N.; Sunbeam, T.; Sweet Marie, H.T.; Yellow President Carnot, H.T.

Canadian Queen, H.T.† (Reg. by H. Dale Estate, 1902; intro. by Breitmeyer Floral Co., and John Breitmeyer's Sons, 1911.) 41, 42.

Captain Hudson, Per. (Kersbargen Brothers, 1911.) 15.

Cardinal, H.T. (J. Cook, 1904.) Liberty × unnamed red seedling. 19.

Carissima, H.W. (Walsh, 1904.) 15*b*. Seedling of *R. Wichuraiana*. 19, 45.

CARMAN, E. S.,——, N. Y. (?) *See* Agnes Emily Carman, H.Rug.

Carmen Sylva, T.† (Heidecker, 1891.) 1.

Caroline Cook, T.† (Anthony Cook, 1871.) Seedling of Safrano, 17.

Caroline Goodrich, H.P. (America.) Syn. Climbing General Jacqueminot. 45.

CARTWRIGHT,——. *See* American Banner, T.†

Catherine Bell, H.P.† 20. (Bell & Son, 1877.) 17.

Celeste, H.W. (Walsh, 1911.) 40.

Champion of the World, Ben. (Woodhouse, 1894.) 1.

CHAMPNEY, JOHN, Charleston, S. C. *See* Champney's Pink Cluster, N.†

Champney's Pink Cluster, N.† Supposed hybrid of *R. chinensis* × *R. moschata* raised about 1810 by John Champney, of Charleston, S. C. About 1817 Philip Noisette, of the same city, grew from it a rose which his brother, Louis Noisette, of Paris, France, distributed as Blush Noisette. 2, 16, 45.

Champ Weiland, H.T. (Weiland & Risch, reg. A. R. S., 1915.) Sport from Killarney.

CHANDLER,——. *See* Mrs. Allen Chandler, B.†

Charles Getz, B.† (Anthony Cook, 1871.) 17.

Charles Wagner, H.P. (Van Fleet, 1904; introduced by Conard & Jones Co.) Jean Liabaud × Victor Hugo.

CHASE NURSERY CO., Chase, Ala. *See* Climbing Papa Gontier, T.

CHENOWETH, E. B., Mt. Vernon, Wash. *See* Florence Chenoweth, A.B.

CHILDS, JOHN LEWIS, Floral Park, N.Y.
See Childs' Jewel, H.T.†; Winter Gem, T.

CHILDS' JEWEL, H.T.† (Childs, 1902.) Sport from Killarney. 15*f*.

CHRISTINE WRIGHT, H.W. (Hoopes, Bro. & Thomas Co., 1909.) Unnamed seedling × Mme. Caroline Testout.

CINDERELLA, H.W. (Walsh, 1909.) 15*b*, 19.

CINDERELLA, N.† (Page, 1859.) 45.

CLARA BARTON, H.T.-Poly. (Van Fleet; intro. by Conard & Jones Co. 1898.) Clotilde Soupert × American Beauty. 16, 32.

CLARK, WM. S., Washington, D. C. *See* Wm. S. Clark, H.T.

CLARKE BROS., Portland, Ore.
See Felicity, H.T.; Mrs. J. C. Ainsworth, H.T.; Mrs. Walter T. Sumner, H.T.; Oregon Ophelia, H.T.

CLEVELAND CUT FLOWER CO., Cleveland, Ohio. *See* White Ophelia, H.T.

CLIMBING AMERICAN BEAUTY, H.W. (Hoopes, Bro. & Thomas Co., 1909.) American Beauty × Marion Dingee × *R. Wichuraiana*. 15*ll*. Silver Medal, A. R. S., 1915.

CLIMBING BRIDESMAID, T. (Dingee & Conard, reg. S. A. F., 1897.) Sport. 15*g*, 42.

CLIMBING CECILE BRUNNER, Poly. (Sport at Riverside, Calif., 1901.) 15.

CLIMBING CLOTILDE SOUPERT, Poly. (Dingee & Conard, 1902.) Sport, 19.

CLIMBING COL. R. S. WILLIAMSON, H.T. (Dingee & Conard) Sport, 15*g*.

CLIMBING COMTESSE EVA STARHEMBERG, T. (Glen Saint Mary Nurseries, 1917.) Sport. 15*h*.

CLIMBING COUNTESS OF OXFORD, H.P. (Smith, 1875.) Sport. 1.

CLIMBING ETOILE DE FRANCE, H.T. (Howard Rose Co., 1915.) Sport. 15*i*.

CLIMBING FRAU KARL DRUSCHKI, H.P. (Lawrenson, 1906.) Sport. 19.

CLIMBING GRUSS AN TEPLITZ, H.T. (Storrs & Harrison, 1911.) Sport. 15*j*.

CLIMBING HELENE CAMBIER, H.T. (California Rose Co., 1911.) Sport. Syn., Climbing Helene Gambier. 15*oo*.

CLIMBING HELEN GOULD, H.T. (Good & Reese, 1912.) Sport from Balduin (Helen Gould). 15*k*.

CLIMBING HUGH DICKSON, H.P. (California Rose Co., 1914.) Sport. 15.

CLIMBING KILLARNEY, H.T. (Reinberg, 1908.) Sport. 15*oo*.

CLIMBING LA FRANCE, H.T. (Henderson, 1893.) Sport, 1, 3, 15*s*, 19.

CLIMBING LIBERTY, H.T. (May, 1908.) Sport. 23, 26.

CLIMBING MARIE GUILLOT, T. (Dingee & Conard, 1898.) Sport. 15*g*.

CLIMBING METEOR, H.T. Sport. 3.

CLIMBING MME. JULES GROLEZ, H.T. (Dingee & Conard.) Sport. 15*g*.

CLIMBING MME. WELCHE, T. (Mellen, 1911.) Sport. 15*k*.

CLIMBING MOSELLA, Poly. (Conard & Jones Co., 1909.) Sport. 19, 25.

CLIMBING MRS. W. J. GRANT, H.T. (E. G. Hill Co., 1899.) Sport from Mrs. W. J. Grant (Belle Siebrecht). Syn. Climbing Belle Siebrecht (W. Paul & Son, 1899.) 23, 15*l*.

CLIMBING MY MARYLAND, H.T. (Dingee & Conard, 1915.) Sport. 15*g*.

CLIMBING ORIENTAL, C. (U. S. Department of Agriculture, 1914.) Seedling. 15.

CLIMBING PAPA GONTIER, T. (Chase & Co., 1905.) Sport. 30.

CLIMBING PERLE DES JARDINS, T. (J. Henderson, 1889.) Sport. 1, 2, 3, 13, 17, 19.

CLIMBING PINK AMERICAN BEAUTY, H.T. (U. S. Nurs. Co., reg. 1914.) 15.

CLIMBING PINK MAMAN COCHET, T. (Conard & Jones Co., 1915.) Sport. Syns., Climbing Maman Cochet; Climbing Pink Cochet. 15*d*.

CLIMBING RAINBOW, T. (California Rose Co., 1914.) Sport. 15.

Climbing Rhea Reid, H.T. (California Rose Co., 1914.) Sport. 15.
Climbing Rosemary, H.T. (Dingee & Conard.) Sport. 15*g*.
Climbing Sunburst, H.T. (Howard Rose Co., 1915.) Sport. 15*i*.
Climbing White Killarney, H.T. (Conard & Jones Co.) Sport. 15*d*.
Climbing Winnie Davis, H.T. (California Rose Co., 1913.) Sport. 15.
Climbing Wootton, H.T. (Thos. Butler, 1899; intro. by Robert Craig.) 15*oo*. Sport of Souv. of Wootton.

COLLIER, H.L. *See* Eugenia, Per.
Columbia, H.T.† (America, 1901.) 45.
Columbia, H.W. (Hoopes, Bro. & Thomas Co., 1903.) Unnamed seedling × Mme. Caroline Testout. 15*ll*.
Columbia, H.T. (E. G. Hill Co., reg. A. R. S., 1917.) Ophelia × Mrs. George Shawyer.

CONARD & JONES CO., West Grove, Pa.
See Alba rubrifolia, H.W.; American Pillar, H.W.; Beauty of Rosemawr, B.; Birdie Blye, Mult.; Charles Wagner, H.P.; Clara Barton, H.T.-Poly.; Climbing Mosella, Poly.; Climbing Pink Maman Cochet, T.; Climbing White Killarney, H.T.; Easter Gem, T.†; Eastern Gem, T.†; Garden's Glory, H.T.†; Henry Irving, H.P.†; Kansas City, H.T.†; May Queen, H.W.; New Century, H.Rug.; Northern Light, H.W.; Pearl Queen, H.W.; Philadelphia, Mult.; Pillar of Gold, Cl.T.†; Royal Cluster, Mult.†; *Rosa rugosa magnifica*, H.Rug.; *Rosa Wichuraiana rubrifolia*, H.W.; *Rosa Wichuraiana variegata*, H.W.; Ruby Queen, H.W.; Sir Thomas Lipton, H.Rug.; The Gem, T.†

CONNOR, D. T. *See* Four Hundred, H.P.†

COOK, ANTHONY, Baltimore, Md.
See Caroline Cook, T.†; Charles Getz, B.†; Cornelia Cook, T.

COOK, JOHN, Baltimore, Md.
See Admiral Schley, H.T.; Annie Cook, T.†; Baltimore, H.T.; Cardinal, H.T.; Crimson Champion, H.T.; Enchanter, H.T.; Enchantress, T.; Francis Scott Key, H.T.; Glorified La France, H.T.; Lord Calvert, H.T.; Madonna, H.T.; Marion Dingee, H.T.; Montrose, H.T.; Mrs. John Cook, H.T.; Mrs. Robert Garrett, H.T.; Mrs. E. W. Sterling, H.T.; My Maryland, H.T.; Panama, H.T.; Pink Beauty, H.T.; Radiance, H.T.; Souvenir of Wootton, H.T.; White Maman Cochet, T.

COOK, THOMAS N., Boston, Mass. *See* Bonnie Prince, H.W.

Coquina, H.W. (Walsh, 1911.) 40.
Cora L. Barton, N.† (Buist, 1850.) Seedling from Lamarque. 21.
Cornelia, H.T. (Robert Scott & Son, Inc., reg. A. R. S., 1919.) Ophelia × Mrs. Aaron Ward.
Cornelia Cook, T. (A. Cook, 1855.) 19. Sometimes given as Cornelie Koch. (A. Koch, 1855.) Seedling from Devoniensis. 17. Syn. Mlle. Denise de Reverseaux. 1.
Corona, Mult. (Burbank, 1913.) 15*m*.
Coronet, H.T.† (Dingee & Conard, reg. S. A. F., 1897.) 1, 13.

CRAIG, ROBERT, Philadelphia, Pa. *See* Climbing Wootton, H.T.
Cream Beauty, H.T.† (Greening, 1902.) 45.
Crimson Champion, H.T. (Cook, 1916.) 15*n*.
Crimson Queen, H.T. (Alex. Montgomery, Jr., 1912.) Liberty × Richmond × General MacArthur.
Crimson Roamer, H.W. (Manda, 1901.) Bardou Job × Jersey Beauty. Syn., Improved Pink Roamer.
Crusader, H.T. (Montgomery & Co., Inc. reg., A. R. S., 1919; intro. by A. N. Pierson, Inc., 1920.) Seedling. 15*n*.
Cumberland Belle, Moss. (Dreer, 1900.) Sport from Princess Adelaide. 19.

CUMMING, ALEX. R., JR., Hartford, Conn. *See* Little Sunshine, Poly.†

DAILLEDOUZE BROS., Brooklyn, N. Y. *See* Ophelia Supreme, H.T.

DALE ESTATE, H., Brampton, ——. *See* Canadian Queen, H.T.†

DARK PINK KILLARNEY, H.T.† (A. N. Pierson, Inc., 1910.) Sport. 27. Certificate of Merit, A. R. S. 1911.

DARK PINK RUSSELL, H.T. (Alex. Montgomery, Jr., 1916.) Sport. 15*o*.

DAVID HARUM, H.T.† (E. G. Hill Co., 1904.) 3, 19.

DAVIS,——. *See* Penelope Mayo, H.P.†

DAWSON, JACKSON, Arnold Arboretum, Jamaica Plain, Mass.
See Apple Blossom, Mult.; Arnoldiana, H.Rug.; Dawson, Mult.; Daybreak, H.W.; Farquhar, H.W.; Ida, Mult.; Lady Duncan, H.W.; Minnie Dawson, Mult.; Pauline Dawson, H.Cl.; *Rosa Jacksonii*, Hybrid.; Sargent, H.W.; Seashell, H.W.; Setigera Hybrid, Hybrid.†; Wm. C. Egan, H.W.

DAWSON, Mult. (Dawson, 1888; intro. by Wm. Strong, 1890.) *R. multiflora* × General Jacqueminot, twice. 19.

DAWSONIANA, Mult. (Ellwanger, 1901.) 13.

DAYBREAK, H.W. (Dawson, 1909; intro. by Eastern Nurseries.) *R. Wichuraiana* × *R. indica carnea.*

DAYDAWN, H.T. (Heller Bros., 1909.) 15*p*.

DEBUTANTE, H.W. (Walsh, 1901.) *R. Wichuraiana* × Baroness Rothschild. 15*b*, 16, 19, 25, 45.

DEFIANCE, H.T.† (E. G. Hill Co., 1907.) Lady Battersea × Gruss an Teplitz. 19.

DEFIANCE, H.T. (Kress, reg. 1914.) Gruss an Teplitz × Etoile de France.

DELIGHT, H.W. (Walsh, 1904.) A. R. S. Cert. of Merit. 15*b*, 19.

De VOECHT & De WILDE. *See* Mrs. Robert Peary, Cl. H.T.

DIETRICH & TURNER, Montebello, Calif.
See Ramona, Læv.; September Morn, H.T.

DINGEE & CONARD CO., West Grove, Pa.
See Climbing Bridesmaid, T.; Climbing Clotilde Soupert, Poly.; Climbing Colonel R. S. Williamson, H.T.; Climbing Marie Guillot, T.; Climbing Mme. Jules Grolez, H.T.; Climbing My Maryland, H.T.; Climbing Rosemary, H.T.; Coronet, H.T.†; Everblooming Prairie Queen, H.Set.; Golden Gate, T.; Helen Mills, H.T.; Henry A. Maynadier, T.; Henry M. Stanley, T.; Highland Mary, T.†; Intensity, H.T.†; Keystone, Mult.; Maud Little, T.†; Mrs. Chas. Dingee, H.T.; Mrs. Jessie Fremont, T.†; Mrs. Robert Peary, Cl.H.T.; Norma, H.T.†; Pearl Rivers, T.; Pink Soupert, T.-Poly.; President Roosevelt, H.T.; Primrose, T.†; Princess Bonnie, T.; Prince Theodore Bonney, H.T.†; Rainbow, T.; Southern Beauty, H.T.†; The Queen, T.; Victory Rose, H.P.†; Virginia, T.; West Grove, H.T.; White Pet, D.Poly.†

DINSMORE, H.P. (Henderson, 1888.) 1.

DORNER & SONS CO., F., La Fayette, Ind.
See Hoosier Beauty, H.T.; Rose Marie, H.T.

DOROTHY PERKINS, H.W. (Jackson & Perkins, 1902.) *R. Wichuraiana* × Mme. Gabriel Luizet. 9. (1901.) 15*q*.

DORRANCE, BENJAMIN, Dorrancetown, Pa. *See* Miss Sarah Nesbitt, T.†

DOUBLE IMPROVED WHITE KILLARNEY, H.T.† (S. J. Reuter & Sons, 1911.) Sport. 42.

DOUBLE LÆVIGATA, Læv. (California, 1900.) Syns. Double Cherokee; *R. lævigata flore-pleno.* 15, 15*oo*.

DOUBLE OPHELIA, H.T. (E. G. Hill Co., reg. A. R. S., 1917.) Ophelia × unnamed seedling.

DOUBLE PINK KILLARNEY, H.T. (Robert Scott & Son, 1910 and F. R. Pierson, 1911.) Sport. 15*r*, 40.

DOUBLE WHITE KILLARNEY, H.T. (Budlong, 1913.) Sport. 15*n*.

DOUBLE WHITE KILLARNEY, H.T. (Totty, 1914.) Sport. 15*e*.

DREER, HENRY A., Philadelphia, Pa. *See* Cumberland Belle, Moss.†

DR. FRANKLIN, H.P.† (Page, 1859.) 45.

DR. HUEY, H.W. (Capt. George C. Thomas, Jr., 1914; reg. A. R. S., 1920; intro. by Bobbink & Atkins and A. N. Pierson, Inc., 1920.) Ethel × Gruss an Teplitz. 43.

DR. KANE, H.P.† (Page, 1859.) 45.

DR. KANE, N.† (Pentland, 1856.) 16. 17.

DR. W. VAN FLEET, H.W. (Van Fleet; introduced by P. Henderson & Co., 1910.) *R. Wichuraiana* × Souv. du President Carnot. Syns., Dr. Van Fleet; Van Fleet Rose. 15*s*, 32.

DUNLOP, JOHN H., Richmond Hill, Ontario, Can.
See Frank W. Dunlop, H.T.; Lady Dorothea, T.; Mr. Toronto, T.†; Mrs. Henry Winnett, H.T.; White Bougere, T.

DURFEE, BENJAMIN, Washington, D. C. *See* Miss Alice Roosevelt, H.T.†

EASTER GEM, T.† (Conard & Jones Co., 1904.) 45.

EASTERN GEM, T.† (Conard & Jones Co., 1905.) 19.

EASTERN NURSERIES, Holliston, Mass.
See Apple Blossom, Mult.; Daybreak, H.W.; Ida, Mult.; Lady Duncan, H.W.; Minnie Dawson, Mult.; Pauline Dawson, H.Cl.; Seashell, H.W.;

EDWARD VII, Poly. (Schultheis, 1910.) 26.

EDWARD EVERETH, B.† (Page, 1859.) 45.

EDWIN F. SMITH, H.T. (Byrnes, U. S. Dept. of Agric., 1918.) 46.

EDWIN LONSDALE, H.W. (Hoopes, Bro. & Thomas Co., 1903.) *R. Wichuraiana* × Safrano. 19. (1900.) 45.

ELEGANS, Set.† (Feast, about 1843.) Syn., Chilicothe Multiflora. 10.

ELIZABETH ZEIGLER, H.W. (A. N. Pierson, Inc., reg. A. R. S. 1917.) Sport of Dorothy Perkins.

ELLA CHATIN, H.T.† (E. G. Hill Co., 1909.) 13.

ELLA MAY, T.† (May, 1890.) 5.

ELLIOTT & SONS, WM., New York, N. Y. *See* Spectacular, H.T.†

ELLIOTT NURSERY, Pittsburgh, Pa.
See Mrs. R. B. Mellon, H.Spin.; *Rosa spinosissima hybrida.*

ELLWANGER & BARRY, Rochester, N.Y.
See Dawsoniana, Mult.; Marshall P. Wilder, H.P.; Minnie Dawson, Mult.; Red Conrad F. Meyer, H.Rug.; Rosalie, T.†; White Dawson, Mult.†

EMPRESS OF CHINA, Ben. (Jackson & Perkins, 1896.) 5, 19. Syn., Apple Blossom. 15*q*.

ENCHANTER, H.T. (J. Cook, 1903.) Mme. Caroline Testout × Furon. 19.

ENCHANTRESS, T. (J. Cook, 1904.) 45.

ERSKINE PARK BELLE, W. (Edw. J. Norman.) Sport from *R. Wichuraiana.* 15*oo*.

ETOILE DE FRANCE, Jr., H.T. (California Rose Co., 1911.) Sport. 15.

EUGENIA, Per. (H. L. Collier, reg. A. R. S., 1920.) Sport of Mme. Edouard Herriot.

EVA CORINNE, Set.† (Pierce, 185-). 10.

EVANGELINE, H.W. (Walsh, 1906.) 15*b*, 19. *R. Wichuraiana* × Crimson Rambler. 12.

EVELYN, H.T. (A. N. Pierson, Inc., reg. A. R. S., 1918.) Sport of Ophelia.

EVERBLOOMING PRAIRIE QUEEN, H. Set. (P. H. Meehan; intro. by Dingee & Conard, 1898.) 42.

EVERGREEN GEM, H.W. (Manda, 1889.) *R. Wichuraiana* × Mme. Hoste. 19. (1899.) 45.

EXCELSA, H.W. (Walsh, 1908.) Syn., Red Dorothy Perkins. 15*oo*. Hubbard Gold Medal, A. R. S., 1914.

FAIR HELEN, H.P. (Smith, 1899.) 45.

FARM JOURNAL, Philadelphia, Pa. *See* Aunt Harriet, H.W.

FARQUHAR, H.W. (Dawson, 1903; intro. by R. & J. Farquhar & Co.) 31. *R. Wichuraiana* × Crimson Rambler. 16, 19. Syn., The Farquhar. 15*oo*.

FARQUHAR & CO., R. & J., Boston, Mass.
See Beacon Belle, H.Poly.-Ayr.; Betty Alden, H.Poly.-Ayr.; Boston Beauty, H. Poly.-Ayr.; Farquhar, H.W.

FEAST, SAMUEL, Baltimore, Md.
See Anna Marie, Set.; Aurora d'Enghien, Prov.†; Baltimore Belle, Set.; Beauty of the Prairies, Set.; Elegans, Set.†; Feast's Pink, Arv.†; King of the Prairies, Set.†; Master Burke (*R. Lawrenciana*)†; Nevia, Set.†; Pallida, Set.†; Perpetual Michigan, Set.†; Superba, Set.†

FEAST'S PINK, Arv.† (Feast,) 45.

FELICITY, H.T. (Clarke Bros., reg. A. R. S., 1919.) Ophelia × Hoosier Beauty.

FIELD BROS., Washington, D. C.
See American Beauty, H.P.; Belle of Washington, H.T.†; Tom Field, H.T.†

FITZSIMMONS, S. C. *See* Queen Madge, H.T.†

FLAG OF THE UNION, T.† (Hallock & Thorpe.) Sport from Bon Silene. 17.

FLORAL EXCHANGE, THE. *See* Queen of Edgely, H.P.

FLORENCE CHENOWETH, A.B. (Chenoweth, reg. A. R. S., 1918.) Sport of Mme. Edouard Herriot.

FLOREX GARDENS, THE, North Wales, Pa. *See* Mavourneen, H.T.

FLOWER OF FAIRFIELD, Mult. (Schultheis, 1908.) Syn., Everblooming Crimson Rambler. 15*oo*.

FLUSH O'DAWN, H.T.† (Walsh, 1902.) Margaret Dickson × Sombreuil. 19. Syn., Blush o'Dawn. 42.

FOUR HUNDRED, H.P.† (Connor, 1901.) Sport from American Beauty. 42.

FRAGRANT BOUQUET, Per.-H.T. (Howard & Smith, reg. A. R. S., 1922.)

FRANCESCHI, ——, ——, Calif.
See Belle Portugaise, H.† (?); Madeleine Lemoine, H.† (?); Montariosa, H.† (?); Montecito, H.† (?).

FRANCES WILLARD, T. (Good & Reese, 1899.) Marie Guillot × Coquette de Lyon. Syn., President Cleveland. 15*k*. 42.

FRANCIS SCOTT KEY, H.T. (J. Cook, 1913.) Radiance × No. 411 (an unnamed crimson seedling.)

FRANK W. DUNLOP, H.T. (John J. Dunlop, reg. A. R. S., 1919; intro. by C. H. Totty Co., 1920.) Mrs. Charles E. Russell × Mrs. George Shawyer.

FREEDOM, H.T.† (Griffin, 1900.) 42.

FREEDOM, H.W. (F. R. M. Undritz, reg. A. R. S., 1918; intro. by Reinhold Undritz, 1918.) Silver Moon × Kaiserin Auguste Victoria. Syn. Climbing White American Beauty.

FREEDOM, H.T. (F. H. Lemon & Co., 1920.) Seedling. 15*nn*.

GAINSBOROUGH, Cl.H.T. (Good & Reese, 1903.) Sport from Viscountess Folkestone. Syns., Climbing Viscountess Folkestone; Gainsboro. 15*k*, 15*oo*.

GALAXY, H.W.† (Walsh, 1906.) 26.

GARDEN, HARVARD UNIVERSITY, Jamaica Plain, Mass.
See America, H.Rug.†

GARDENIA, H.W. (Manda, 1899.) *R. Wichuraiana* × Perle des Jardins. 19. Syn., Hardy Marechal Niel. 15*oo*.

GARDEN'S GLORY, H.T.† (Conard & Jones Co., 1905.) 42.

GARDNER, RICHARD. *See* Newport Fairy, Mult.

GARNET CLIMBER, H.W. (Van Fleet, 1907; intro. by P. Henderson & Co., 1908.) *R. Wichuraiana* × Lucullus. 32, 39.

GEM OF THE PRAIRIE, Set.† (Burgesse, 1860.) Beauty of the Prairies × Mme. Laffay. 7.

GEN. JOHN PERSHING, H.W. (F. R. M. Undritz, reg. A. R. S., 1917, as "F. R. M. Undritz;" intro. by Reinhold Undritz.) Dr. W. Van Fleet × Mrs. W. J. Grant (Belle Siebrecht). Name changed by permission of Executive Committee, A. R. S., Jan. 12, 1920.

GENERAL MACARTHUR, H.T. (E. G. Hill Co., 1904.) 19.

GENERAL OLIVER, H.P.† (Page, 1859.) 45.

GENERAL ROBERT E. LEE, T. (Good & Reese, 1896.) 15*k*.

GENERAL TAYLOR, B.† (America, ——.) 45.

GENERAL VON MOLTKE, H.P.† (Bell & Son, 1873.) Seedling from Chas. Lefebvre. 17.

GENEVIEVE, Mult.† (Jackson & Perkins, 1911.) 42.

GEORGE PEABODY, H.Ben.† (Pentland, 1857.) 1, 16. Seedling from Paul Joseph. 17.

GERSDORFF, CHAS. E. F., Washington, D. C.
See Mrs. Charles Gersdorff, Cl.H.T.

GILL, ——.
See Mrs. Cleveland, H.P.†; Sarah Isabelle Gill, T.†

GLADY TALBOT, H.W.† (Manda, 1904.) 37.

GLEN SAINT MARY NURSERIES, Glen Saint Mary, Fla.
See Climbing Comtesse Eva Starhemberg, T.

GLORIFIED LA FRANCE, H.T. (J. Cook, reg. A. R. S., 1919.) Frau Karl Druschki × Mrs. Charles E. Russell.

GOLDEN GATE, T. (Jones, about 1888; intro. by Dingee & Conard, 1892.) Safrano × Cornelia Cook. 5, 9, 16, 19.

GOLDEN GEM, H.T. (Towill, reg. A. R. S., 1917.) Lady Hillingdon × Harry Kirke.

GOLDEN RULE, H.T. (E. G. Hill Co., 1918.) Ophelia seedling × Sunburst.

GOLDEN TROPHY, Cl.T. (California Rose Co., 1914.) 15. Sport from Duchesse de Auerstadt. 30.

GOOD & REESE CO., Springfield, Ohio.
See Climbing Helen Gould, H.T.; Frances Willard, T.; Gainsborough, Cl.H.T.; General Robert E. Lee, T.; Helen Good, T.

GRAY, ANDREW, ———, S. C. *See* Isabella Gray, N.; Ophelia, T.†

GREATHEART, H.T. (Rosenbluth, 1918; reg. A. R. S., 1922.) Sport of Mrs. Walter Easlea. 15*pp*.

GREAT WESTERN, H.Ben.† (America.) 45.

GREENING, ——. *See* Cream Beauty, H.T.†

GRIFFIN, ARTHUR. *See* Freedom, H.T.†

GUDE BROS. CO., Washington, D. C. *See* Red Radiance, H.T.

HADLEY, H.T. (Montgomery Co. Inc.; intro. by A. N. Pierson, Inc., 1914.) (Liberty × Richmond) seedling × General MacArthur. Awarded Gold Medal, A. R. S., 1914.

HALLOCK & THORPE, Queens, Long Island, N. Y.
See Flag of the Union, T.†; Queens Scarlet, Ben.

HANSEN, H.Rug. (Budd, 189–.) Syn., Hansa, 15*v*.

HARISON, ——, New York. N. Y. *See* Harison's Yellow, Brier.

HARISON'S YELLOW, Briar. (Harison, 1830.) 1, 10, 19. Syns., Hogg's Yellow; Yellow Sweetbrier. 21. Possible parentage Austrian Briar × *R. spinosissima.* 34.

HEIDECKER, ——. *See* Carmen Sylva, T.†

HELEN GOOD, T. (Good & Reese, 1906.) Sport from Maman Cochet. 15*k*, 19. Syn., Golden Cochet. 15*w*.

HELEN MILLS, H.T. (Dingee & Conard, 1910.) 25.

HELEN TAFT, H.T. (Byrnes, U. S. Dept. of Agric., 1913.) Syn., Miss Helen Taft. 15*x*, 46.

HELLER BROTHERS, Newcastle, Ind. *See* Daydawn, H.T.

HENDERSON, JOHN. *See* Climbing Perle des Jardins, T.

HENDERSON & CO., PETER, New York, N.Y.
See Abundance, Poly.; Climbing La France, H.T.; Dinsmore, H.P.; Garnet Climber, H.W.; Little White Pet, D.Poly.†; Pan-American, H.T.†; Priscilla, H.T.; Dr. W. Van Fleet, H.W.; Radiance, H.T.; Setina, Cl.B.; Silver Moon, H.W.; Snowball, Poly.†; Sunset, T.

HENRY A. MAYNADIER, T.† (Dingee & Conard.) 15*g*.

HENRY CLAY, B.† (America.) 45.

HENRY IRVING, H.P.† (Conard & Jones Co., 1907.) 19.

HENRY M. STANLEY, T. (Dingee & Conard, 1891.) 1.

HIAWATHA, H.W. (Walsh, 1904.) First Prize, A. R. S. 15*b*, 16. Crimson Rambler × Carmine Pillar. 19.

HIBBERTIA, C.† (Buist, about 1830.) 21.

HIGHLAND MARY, T. (Dingee & Conard, 1908.) 19.

HILDA, H.T. (Myers & Samtman, 1911.) Sport from My Maryland. 40.

HILL'S AMERICA, H.T. (E. G. Hill Co., reg. A. R. S., 1921.) Rose Premier × American Beauty.

HILL CO., E. G., Richmond, Ind.
See Admiral Evans, H.T.†; Alice Lemon, H.T.; America, H.T.†; Atlas, H.T.†; Climbing Mrs. W. J. Grant, H.T.; Columbia, H.T.; David Harum, H.T.†; Defiance, H.T.†; Double Ophelia, H.T.; Ella Chatin, H.T.†; General MacArthur, H.T.; Golden Rule, H.T.; Hill's America, H.T.; Indiana, H.T.; Janice Meredith, Ben.†; Mark Twain, H.T.†; Mary Hill, H.T.; Marigold, T.; Mayflower, T.; May Miller, H.T.; Mlle. Marthe Hyrigoyen, H.C.†; Mme. Butterfly, H.T.; Mrs. Theodore Roosevelt, H.T.; Nestor, H.T.†; Olivia, H.T.; Panama, H.P.†; Paul de Longpre, H.T.†; Premier, H.T.; Reliance, H.T.†; Rena Robbins, H.T.; Rhea Reid, H.T.; Richmond, H.T.; Robert Heller, H.T.; Robin Hood, H.T.; Rosalind Orr English, H.T.; Rosemary, H.T.; Rose Premier, H.T. (see Premier); Rose Queen, H.T.; The Oregon, H.T.†; Triumph, H.T.†; Victor, H.T.; Young America, H.T.†

HILL CO., JOS. H., Richmond, Ind. *See* Red Columbia, H.T.

HOCKBRIDGE, ——, ———, Calif. *See* Amœna, Læv.

HOERBER BROS., Chicago, Ills. *See* Wilhelmina, H.T.†

HOFFMEISTER, ——. *See* Maid of Honor, T.†

HOOPES, BRO. & THOMAS CO., West Chester, Pa.
See Christine Wright, H.W.; Climbing American Beauty, H.W.; Columbia, H.W.; Edwin Lonsdale, H.W.; John Burton, H.W.; Prof. C. S. Sargent, H.W.; Purity, H.W.; Robert Craig, H.W.; Wm. C. Egan, H.W.; Wm. K. Harris, H.W.; W. T. Dreer, H.W.

HOOSIER BEAUTY, H.T. (F. Dorner & Sons Co., 1915.) Syn., Liberty Beauty.

HOPP & LEMKE, Detroit, Mich. *See* La Detroit, H.T.

HOWARD ROSE CO., Hemet, Calif.
See Climbing Etoile de France, H.T.; Climbing Sunburst, H.T.

HOWARD & SMITH, Los Angeles, Calif.
See California, H.T.; Fragrant Bouquet, Per.-H.T.; Los Angeles, H.T.; Miss Lolita Armour, Per.; Mrs. S. K. Rindge, Per; Mrs. W. C. Egan, Per.-H.T.; Pink Ophelia, H.T.; Wm. F. Dreer, Per.; Fragrant Bouquet, Per.-H.T.: Mrs. William C. Egan, Per.-H.T.

IDA, Mult. (Dawson, 189–; intro. by Eastern Nurseries.) Dawson × *R. multiflora.* 29.
IDEAL, H.T. (Becker, 1900.) 15, 19.
IMPROVED RAINBOW, T. (Burbank.) 15*y*.
IMPROVED UNIVERSAL FAVORITE, H.W.† (Manda, 1901.) 37.
INDIANA, H.T. (E. G. Hill Co., 1907.) 13. Rosalind Orr English × Frau Karl Druschki. 12.
INTENSITY, H.T. (Dingee & Conard, 1908.) 19, 25.
ISABELLA GRAY, N. (Gray, 1855.) Seedling from Chromatella (Cloth of Gold). 8, 17.
ISABELLA SPRUNT, T. (Sprunt, 1866; intro. by Isaac Buchanan) 17.
IVORY, T. (American Rose Co., 1902.) Sport from Golden Gate. 3, 19. Syn., White Golden Gate. 15*oo*. (1901.) 45.

JACKSON & PERKINS CO., Newark, Wayne Co., N. Y.
See Dorothy Perkins, H.W.; Empress of China, Ben.; Genevieve, H.Cl.†; Oriole, Mult.†; Sunshine, H.Cl.†

JACKSONIA, C.† (Buist, about 1830.) Syn., Hundred-leaved Daily. 21.
JAMES SPRUNT, Cl.Ben. (Sprunt, 1856; intro. by Peter Henderson.) 6, 9. Sport from Agrippina. 17.
JANE, Set.† (Pierce, about 1850.) 1, 10.
JANICE MEREDITH, Ben.† (E. G. Hill Co., 1902.) 45.
JERSEY BEAUTY, H.W. (Manda, 1899.) *R. Wichuraiana* × Perle des Jardins. 19.
JESSICA, H.W.† (Walsh, 1909.) 25.
JOHN BURTON, H.W. (Hoopes, Bro. & Thomas Co., 1903.) *R. Wichuraiana* × Safrano. 19.

JONES, ——, New Orleans, La. *See* Golden Gate, T.
J. S. FAY, H.P. (Walsh, 1899.) 15*b*, 19. Prince Camille de Rohan × Pierre Notting. 42.
JUANITA, H.W. (Walsh, 1907.) 38.
JUBILEE, H.P. (Walsh, 1897.) Victor Hugo × Prince Camille de Rohan. 15*b*, 16.
KALMIA, H.W. (Walsh, 1911.) 25.
KANSAS CITY, H.T.† (Conard & Jones Co., 1903.) 45.

KERSBARGEN BROS. *See* Captain Hudson, Per.
KEYSTONE, Mult. (Dingee & Conard, 1904.) 15*g*, 19.
KILLARNEY QUEEN, H.T. (J. A. Budlong & Son Co.; intro. by A. N. Pierson, Inc., 1912.) Sport. 40.
KING DAVID, H.P. (California Rose Co , 1910.) 15. Sport of Vick's Caprice. 30.
KING OF THE PRAIRIES, Set.† (Feast, 1843.) 1, 10.

KRAMER, F. H., Washington, D. C. *See* Queen Beatrice, H.T.
KRESS, EDWARD, Baltimore, Md. *See* Defiance, H.T.
LA DETROIT, H.T. (Hopp & Lemke, 1904; intro. by J. Breitmeyer's Sons and Breitmeyer Floral Co., 1905.) 15*oo*, 45. Mme. Caroline Testout × Bridesmaid. 42.
LADY ANN BORODELL, H.T. (S. J. Reuter & Son, Inc., reg. A. R. S. 1914.) Sport from My Maryland. 28.
LADY BLANCHE, H.W. (Walsh, 1913.) 15*b*.
LADY CROMWELL, H.T.† (A. N. Pierson, Inc., 1910.) Sport of My Maryland. 42.
LADY DOROTHEA, T. (Dunlop, 1898.) 16. Sport from Sunset. 42.
LADY DUNCAN, H.W. (Dawson, 1900; introduced by Eastern Nurseries.) *R. Wichuraiana* × *R. rugosa.*

Lady Gay, H.W. (Walsh, 1905.) 15*b*, 19. *R. Wichuraiana* × Bardou Job. 5, 16.
Lady Joy, H.T. (Nanz & Neuner, 1901.) American Beauty × Mrs. W. J. Grant (Belle Siebrecht). 42.
Lady Mars, Cl.T. (California Rose Co., 1909.) 15. Sport from Gloire de Dijon. 30.
La Fiamma, H.W. (Walsh, 1909.) 15*b*, 19. Syn., La Flamme. 15*oo*.
Lafrano, H.T.† (America.) 39.

LANDRETH, D. & C., Philadelphia, Pa.
See Landreth's Carmine, N.†; Washington, Ben.†

Landreth's Carmine, N.† (D. & C. Landreth, 1824.) Syn., Carmine Cluster. 10.
Lansdowne, H.T. (Leonard, reg. A. R. S., 1914.)

LAWRENSON, ——. *See* Climbing Frau Karl Druschki, H.P.
Legion, H.T. (Towill, 1920.) Milady seedling × Hadley seedling. 15*x*. (Changed from "American Legion" because association of that name objected to same.)

LEMON & CO., F. H., Richmond, Ind.
See Angelus, H.T.; Freedom, H.T.; Miss Amelia Gude, H.T.; Premier Dawn, H.T.; Rotarian, H.T.

LEONARD, W. A., Lansdowne, Pa. *See* Lansdowne, H.T.
Le Vesuve, Ben.-C.† (Sprunt, 1858.) 3.
Lilian Nordica, H.T.† (Walsh, 1898.) Margaret Dickson × Mme. Hoste. 42.
Little Sunshine, Poly.† (Alex. R. Cumming, Jr.; reg. A. R. S., 1915, A. N. Pierson, Inc.) *R. multiflora nana* × Soleil d'Or.
Little White Pet, Poly.† (Henderson, 1879.) 1, 13, 19.
Lord Calvert, H.T. (J. Cook, 1919.) Radiance × Hoosier Beauty.
Los Angeles, H.T. (Howard & Smith; reg. A. R. S., 1916.) Mme. Segond Weber × Lyon Rose. Gold Medal, Bagatelle (Paris), 1918.

LOVETT, J. T., Little Silver, N. J.
See Alice Aldrich, H.Rug.; Alida Lovett, H W.; Bess Lovett, H.W.; Mary Lovett, H.W.; Mrs. Lovett, H.W.

Lucile, H.W. (Walsh, 1911.) 40.
Lutea, N.† (Buist.) Syn., *R. Smithii*, 21.

MACKENZIE, ——, Philadelphia, Pa. *See* Miss Sargent, T.†
Madeleine Lemoine, H.† (?) (Franceschi) *R. moschata* × *R. odorata gigantea*. 34.
Madison, T. (Brandt-Hentz, 1912.)
Madonna, H.T. (J. Cook, 1908.) Furon × Marie Van Houtte.
Magnafrano, H.T. (Van Fleet, 1905; intro. by Conard & Jones Co.) Magna Charta × Safrano. 19.
Maid Marian, H.W. (Walsh, 1909.) 15*b*.
Maid of Honor, T.† (Hoffmeister, 1899.) Sport of Catherine Mermet. 16, 19.

MANDA, INC., W. A., South Orange, N. J.
See Bridal Wreath, H.W.†; Crimson Roamer, H.W.; Evergreen Gem, H.W.; Gardenia, H.W.; Glady Talbot, H.W.†; Improved Universal Favorite, H.W.†; Jersey Beauty, H.W.; Manda's Triumph, H.W.; Orange Perfection, H.P.†; Pink Pearl, H.W.; Pink Roamer, H.W.; South Orange Beauty, H.W.†; South Orange Perfection, H.W.; Universal Favorite, H.W.; White Star, H.W.

Manda's Trimuph, H.W. (Manda, 1898.) 37. *R. Wichuraiana* × a Hybrid Perpetual. 19. (Reg. S. A. F., 1897.) 42.
Marigold, T. (E. G. Hill Co., 1905.) 45.

MARION BRUNELL, Cl.T. (F. H. Brunell, 1917.) Sport of Reine Marie Henriette. 15*z*.

MARION DINGEE, H.T. (J. Cook, 1889.) Caserta × General Jacqueminot × Safrano. 19.

MARK TWAIN, H.T.† (E. G. Hill Co., reg. A. R. S., 1902.) 5, 13, 19, 25.

MARSHALL P. WILDER, H.P. (Ellwanger & Barry, 1885.) 15*aa*, 16, 17.

MARTIN & FORBES, Portland, Ore. *See* May Martin, H.T.

MARY HILL, H.T. (E. G. Hill Co., 1917.) Ophelia × Sunburst.

MARY LOVETT, H.W. (Van Fleet, 1915; intro. by J. T. Lovett, 1915.) *R. Wichuraiana* × Kaiserin Auguste Victoria.

MARY WALLACE, H.W. (Van Fleet, 1921; to be intro. by A. R. S., *R. Wichuraiana* × Pink Hybrid Tea.

MARY WASHINGTON, H.Set. (Said to have been raised by George Washington on his estate at Mount Vernon, from seed, and named by him in honor of his mother.) 18, 45. Syn., Martha Washington. 15*oo*.

MASTER BURKE, (*R. Lawrenciana*).† (Feast.) 21.

MAUD LITTLE, T.† (Dingee & Conard, 1891.) 1.

MAVOURNEEN, H.T. (The Florex Gardens, reg. A. R. S., 1913.) Sport from Killarney. 37.

MAX GRAF, Hyb. (Reg. A. R. S., 1919, by James H. Bowditch as *Rosa hybrida* Max Graf.) Thought to be a hybrid of *R. rugosa* × *R. setigera*.

MAY, H.B. Summit, N. J. *See* Climbing Liberty, H.T.; Princess Ena, Poly.

MAY, JOHN N., Summit, N.J.
See Bride, T.; Brighton Beauty, T.†; Ella May, T.†; Mrs. J. Pierpont Morgan, T., Mrs. W. C. Whitney, H.T.; Oakmont, H.P.

MAYFLOWER, T. (E. G. Hill Co., 1910.)

MAY MARTIN, H.T. (Martin & Forbes, 1918.) Sport of Ophelia.

MAY MILLER, H.T. (E. G. Hill Co., 1910.) Unnamed seedling × Paul Neyron. 5.

MAY QUEEN, H.W. (Van Fleet, 1898; intro. by Conard & Jones Co.) 19. *R. Wichuraiana* × Mrs. de Graw. 16.

McCULLOUGH, ——, Cincinnati, Ohio. *See* President Taft, H.T.

McGORUM, ROBERT T., Natick, Mass. *See* William Wright Walcott, H.T.

MEEHAN, P.H. *See* Everblooming Prairie Queen, H.Set.

MEEHAN & SONS, THOS., Dresher, Pa. *See* Pink Bedder, H.T.†

MELLEN & CO., GEORGE, Springfield, Ohio. *See* Climbing Mme. Welche, T.

MEYER, FRANK N., U. S. Dept. of Agric., Washington, D.C.
See Rosa odorata, Double White, Species; *Rosa xanthina*, Species; *Rosa xanthina, forma normalis*, Species.

MEXICO, H.P.† (Bryant, 1863.) 45.

MILADY, H.T. (Towill, 1913.) Richmond × J. B. Clark. 15*mm*.

MILEDGEVILLE, H.Set.† (America.) 45.

MILKY WAY, H.W. (Walsh, 1900.) 15*b*.

MILL'S BEAUTY, H.Set.† (America.) 45.

MINNEAPOLIS FLORAL CO., Minneapolis, Minn.
See Miss Kate Moulton, H.T.

MINNEHAHA, H.W. (Walsh, 1904.) 45. *R. Wichuraiana* × Paul Neyron. 5, 16, 19.

MINNIE DAWSON, Mult. (Dawson, 189–; intro. by Ellwanger & Barry, and Eastern Nurseries.) *R. Wichuraiana* × Dawson. 29, 31.

MINNIE FRANCIS, T. (America.) 15*z*.

MISS ALICE ROOSEVELT, H.T.† (Durfee, 1902; American Rose Co., reg. S. A. F., 1902.) 42, 45.

Miss Amelia Gude, H.T. (F. H. Lemon & Co., reg. A. R. S., 1921.) Columbia × Sunburst.

Miss Bell, T.† (Introducer and date unknown.) 10.

Miss Kate Moulton, H.T. (Monson; intro. by Minneapolis Floral Co., 1906.) 42. Mme. Caroline Testout × La France × Mrs. W. J. Grant (Belle Siebrecht). 15, 19.

Miss Lolita Armour, Per. (Howard & Smith, 1919.) Result of a cross between two unnamed seedlings. Gold Medal, Bagatelle (Paris), 1921.

Miss Maudy Shubrook, H.T. (California Rose Co., 1914.) Sport from Mrs. Aaron Ward. 15.

Miss Mildred Vestal, H.T. (Joseph W. Vestal & Son, 1919.) Rhea Reid × Richmond. 15*qq*.

Miss Ruby Dent, H.P. (California Rose Co., 1916.) Sport from Mrs. John Laing; also classed as a Hybrid Tea. 15.

Miss Sarah Nesbitt, T.† (B. Dorrance, 1910.) 27. Sport from Mme. Cusin. 42.

Miss Sargent, T.† (Mackenzie, about 185–.) 10.

MITCHELL, ——. *See* William Warder, H.P.

Mlle. Marthe Hyrigoyen, H.C.† (E. G. Hill Co., 1902.) 25.

Mme. Boll, Portlandica.† (Boll, 1859.) 45.

Mme. Boll, H.P.† (Boll, 1858.) 1.

Mme. Butterfly, H.T. (E. G. Hill Co., 1918.) Sport of Ophelia.

Mme. Byrne, N.† (Buist, 1850.) 10. Seedling of Lamarque. 21.

Mme. Trudeaux, H.P.† (Boll, 1850.) 1, 17.

Mme. Trudeaux, D.† (Boll.) 10.

Molloty, H.T. (Schoener, 1919. (?).) Maman Cochet × Kaiserin Auguste Victoria. 15*dd*.

MONSON, ——. *See* Miss Kate Moulton, H.T.

Montariosa, H.(?)† (Franceschi.) *R. moschata* × *R. odorata gigantea*. 34.

Montecito, H.(?)† (Franceschi.) *R. moschata* × *R. odorata gigantea*. 34.

MONTGOMERY CO. Inc., Hadley, Mass.
See Boston, H.T.; Crusader, H.T.; Hadley, H.T.; Pilgrim, H.T.; Montgomery's Priscilla, H.T.

MONTGOMERY, Jr., ALEX. Hadley, Mass.
See Crimson Queen, H.T.; Dark Pink Russell, H.T.; Mrs. Charles Russell, H.T.; Wellesley, H.T.

MONTGOMERY, ROBERT, Natick, Mass. *See* Mrs. Oliver Ames, T.

Montgomery's Priscilla, H.T. (Montgomery Co.; intro. by A. N. Pierson, 1922.) Seedling of a Montgomery seedling by Ophelia.

Montrose, H.T. (J. Cook, 1916.) Unnamed red × Laurent Carle.

MOORE, FRANK M., Chatham, N. J. *See* Bridesmaid, T.; Muriel Moore H.T.

Mr. Toronto, T.† (Dunlop, 1892.) 45.

Mr. Vernon, Ben.† (Page, 1859.) Syn. Mons. Vernon. 45.

Mrs. Allen Chandler B.† (Chandler, 1903.) 45.

Mps. Bayard Thayer, H.T. (Waban Rose Cons., reg. A. R. S., 1916.)

Mrs. Beimont Tiffany, H.T. (Budlong, reg. A. R. S., 1917; intro. by A. N. Pierson, Inc., 1918.) Sport of Sunburst.

Mrs. Brook E. Lee, H.T. (Byrnes, U. S. Dept. of Agric., 1918.) 46.

Mrs. B. T. Galloway, H.T. (Byrnes, U. S. Dept. of Agric., 1918.) 46.

Mrs. Charles Bell, H.T. (Mrs. Charles Bell; A. N. Pierson, Inc., reg. A. R. S., 1917.) Sport of Radiance.

Mrs. Charles Dingee, H.T. (Dingee & Conard.) 15*g*.

Mrs. Charles Gersdorff, Cl.H.T. (Gersdorff, reg. A. R. S., 1916.) White climbing rose × Killarney.

Mrs. Charles E. Russell, H.T. (Alex. Montgomery, Jr., 1913.) "Mme. Abel Chatenay, Marquise Litta de Breteuil, Mme. Caroline Testout, Mrs. W. J. Grant, General MacArthur, and three seedlings resulting from these crosses are all combined to produce Mrs. Charles E. Russell."

Mrs. Cleveland, H.P.† (Gill, 1897.) 1, 13, 19.

Mrs. C. W. Thompson, Mult. (U. S. Dept. of Agric., intro. by Storrs & Harrison, 1920.)

Mrs. de Graw, B. (Burgess, 1885.) 16.

Mrs. Edworgt, H.Set.† (America.) 45.

Mrs. E. T. Stotesbury, H.T. (Towill, reg. A. R. S., 1918.) Seedling (Joseph Hill × My Maryland) × Milady.

Mrs. E. W. Sterling, H.T. (J. Cook, 1916; not disseminated.) Antoine Rivoire × unnamed pink seedling.

Mrs. F. F. Thompson, H.T. (Totty, 1915.) Sport of Mrs. George Shawyer. 15*e*.

Mrs. George C. Thomas, Cl. H. T. (Capt. George C. Thomas, Jr., 1921; intro. by Andorra Nurseries, 1922.) Cl. Mme. Car. Testout × Moonlight. See pages 125, 157.

Mrs. Henry Winnett, H.T. (Dunlop, reg. A. R. S., 1917.) Mrs. Charles E. Russell × Mrs. George Shawyer.

Mrs. James G. Penny, H.T. (Joseph W. Vestal & Son.) Sport of Radiance.

Mrs. J. C. Ainsworth, H.T. (Clarke Bros., 1918.) Sport of Mrs. Charles E. Russell.

Mrs. Jessie Fremont, T.† (Dingee & Conard, 1891.) 1, 45.

Mrs. John Cook, H.T. (J. Cook, reg. A. R. S., 1919; intro. by A. N. Pierson, Inc., 1920.) Ophelia × three unnamed seedlings.

Mrs. J. Pierpont Morgan, T. (J. May, 1895.) 16. Sport of Mme. Cusin. Syn., Mrs. Pierpont Morgan. 15*oo*.

Mrs. Lovett, H.W. (Van Fleet; intro. by Lovett. 1917.) 15*a*.

Mrs. Marshall Field, H.T.† (Reinberg, 1906.) 42.

Mrs. Mary Neihoff, H.T. (Neihoff, 1908.) Syn., Aurora. 42.

Mrs. M. H. Walsh, H.W. (Walsh, 1911.) Syn., Mrs. Walsh. 15*oo*. Gold Medal, A. R. S., 1911.

Mrs. Moorfield Storey, H.T. (Waban Rose Conservatories, reg. A. R. S., 1915.) General MacArthur × Joseph Hill.

Mrs. Oliver Ames, T. (R. Montgomery, 1898.) Sport from Mrs. J. Pierpont Morgan. 42.

Mrs. Opie, T.† (Bell & Son, 1877.) 17.

Mrs. Paul Neihoff, H.T.† (Neihoff, 1903.) 39.

Mrs. Pierce, Set.† (Pierce, about 1850.) 10, 17. Syn., Mrs. Hovey. 22.

Mrs. Potter Palmer, H.T.† (P. Breitmeyer's Sons, 1909.) 19, 25.

Mrs. Prentiss Nichols, H.T. (Robert Scott & Sons, 1922.) 15*oo*.

Mrs. R. B. Mellon, H.Spin. (Elliott Nursery, 1917.) Seedling. 15*ee*.

Mrs. Robert Garrett, H.T. (J. Cook, 1900.) Caserta × F. E. Verdier.

Mrs. Robert Peary, Cl.H.T. (De Voecht & De Wilde; intro. by Dingee & Conard, 1897.) Sport from Kaiserin Auguste Victoria. 45.

Mrs. Sarah Yeats, H.T. (Yeats, reg. S. A. F., 1916; intro. by A. L. Randall Co., 1917.)

Mrs. Siddons, N.† (America.) 45.

Mrs. S. K. Rindge, Per. (Howard & Smith, 1919.) Rayon d'Or × Frau Karl Druschki. 15*cc*.

Mrs. Smith, H.P.† (America.) 45.

Mrs. Theodore Roosevelt, H.T. (E. G. Hill Co., 1904.) Sport of La France. 19.

Mrs. Walter Sumner, H.T. (Clarke Bros., reg. A. R. S., 1920.) Ophelia × Hadley.

Mrs. W. A. Taylor, H.T. (Byrnes, U. S. Dept. of Agric., 1918.) 46.
Mrs. William C. Egan, Per.-H.T. (Howard & Smith, reg. A. R. S., 1922.)
Mrs. W. C. Whitney, H.T. (J. May, 1894.) 11, 16.
Mrs. Wm. R. Hearst, H.T. (A. N. Pierson, Inc., reg. A. R. S., 1916.) Sport of My Maryland. 15*n*.
Muriel Moore, H.T. (Moore, 1916.) Sport of My Maryland.

MYERS & SAMTMAN, Wyndmoor, Philadelphia, Pa.
See Hilda, H.T.†; Wyndmoor, H.T.

My Maryland, H.T. (J. Cook, 1908.) Madonna × Enchanter.
My Queen, H.T. (Schoener, 1919.) Golden Gate × British Queen. 15*dd*.

NANZ & NEUNER.
See Lady Joy, H.T.; Pink Perle des Jardins, T. †;Southern Beauty, H.P.†; Virginia, T.; White Pearl, T.†; Winnie Davis, H.T.

NEIHOFF, ——. *See* Mrs. Mary Neihoff, H.T.; Mrs. Paul Neihoff, H.T.†
Nestor, H.T.† (E. G. Hill Co., 1902.) 45.
Nevia, Set.† (Feast, 1843.) 10.
New Century, H.Rug. (Van Fleet, 1900; intro. by Conard & Jones Co.) *R. Wichuraiana* × Clotilde Soupert.
Newport Fairy, Mult. (Gardner; intro. by Roehrs, 1908.) 12, 19. *R. Wichuraiana* × Crimson Rambler. Syn., Newport Rambler. 39, 42.
Niles Cochet, T. (California.) 15*y*.

NOISETTE, PHILLIP, Charleston, S. C. *See* Blush Noisette, N.†
Nokomis, H.W. (Walsh, 1918.) *R. Wichuraiana* × Comte de Raimbaud.
Norma, H.T.† (Dingee & Conard, 1904.) 4, 19, 25.

NORMAN, EDWARD J. *See* Erskine Park Belle, W.
Northern Light, H.W. (Van Fleet, 1898; intro. by Conard & Jones Co.) Wichuraiana hybrid. 19.
Oakmont, H.P. (J. May, 1893.) 19.

O'CONNOR, ——, New Orleans, La. *See* Ruby Gold, T.†
Olivia, H.T. (E. G. Hill Co., 1907.) 19. Syn., Oliva. 15*oo*.
Onandaga Seedling, H.P.† (Smiley, 1904.) 45.
Ophelia, N.† (America.) 45.
Ophelia, T.† (Gray, 1858.) 45.
Ophelia Supreme, H.T. (Dailledouze Bros., reg. S. A. F., 1917.) Sport. 24.
Orange Perfection, H.P.† (Manda, 1898.) 1.
Oregon Ophelia, H.T. (Clarke Bros., 1920.) Sport of Ophelia.

ORIGINATORS AND INTRODUCERS UNKNOWN.
See Augusta, N.; Beauty of Greenwood, N.†; Caroline Goodrich, Cl.H.P.; Climbing Cecile Brunner, Poly.; Climbing Meteor, H.T.; Columbia, H.T.†; Double Lævigata, Læv.; General Taylor, B.†; Great Western, H.Ben.†; Henry Clay, B.†; Lafrano, H.T.†; Miledgeville, H.Set.†; Mill's Beauty, H.Set.†; Minnie Francis, T.; Miss Bell, T.†; Mrs. Edworgt, H.Set.†; Mrs. Siddons, N.†; Niles Cochet, T.; Ophelia, N.†; Pink Cherokee, H.Læv.; Pride of the South, Set.; *Rosa bracteata*, Species; *Rosa humilis hybrida*, Hybrid; *Rosa lævigata*, Species; Souv. of Henry Clay, Centifolia-pomponf†; Tennessee Belle, Mult.; Virginian Lass, H.Set.†; Virginian Rambler, Mult.†; William Herbert, H.P.†

Oriole, Mult.† (Jackson & Perkins, 1911.) 42.
Oriole, H.T. (California Rose Co., 1910.) 15.

PAGE, N., Philadelphia, Pa.
See Amarante, B.†; America, N.†; Buena Vista, B.†; Bunker Hill, B.†; Cinderella, N.†; Dr. Franklin, H.P.†; Dr. Kane, H.P.†; Edward Evereth, B.†; General Oliver, H.P.†; Mr. Vernon, Ben.†; Star of the West, B.†

Pallida, Set.† (Feast, 1843.) 10, 17, 20.
Panama, H.P.† (E. G. Hill Co., 1908.) Paul Neyron × seedling of Joseph Hill. 5.

PANAMA, H.T. (J. Cook, 1913; reg. A. R. S., 1919.) Frau Karl Druschki × unnamed pink seedling. Awarded Silver Medal, A. R. S., 1915.
PAN-AMERICAN, H.T.† (P. Henderson & Co., 1901.) American Beauty × Mme. Caroline Testout. 19, 42.
PARADISE, H.W. (Walsh, 1907.) 15*b*, 19.
PARKER, ——. *See* Red Pet, Ben.†
PAUL DE LONGPRE, H.T.† (E. G. Hill Co., 1906.) 19.
PAULINE DAWSON, H.Cl. (Dawson, 1916; intro. by Eastern Nurseries.) 31.
PEARL OF THE PACIFIC, H.T.† (Schoener, 1919.) Seedling. 15*dd*.
PEARL QUEEN, H.W. (Van Fleet, 1898; intro. by Conard & Jones Co., 1911.) 32, 42. *R. Wichuraiana* × Mrs. de Graw. 16.
PEARL RIVERS, T. (Dingee & Conard, 1890.) 1, 16.
PENELOPE MAYO, H.P.† (Davis, 1878.) 1.

PENTLAND & SONS, JAMES, Baltimore, Md.
See Beauty of Greenmont, H.Set.†; Dr. Kane, N.†; George Peabody, H.Ben.†; Woodland Marguerite, B.†

PERPETUAL MICHIGAN, Set.† (Feast, about 1843.) 10.
PHILADELPHIA, Mult. (Van Fleet, 1904; intro. by Conard & Jones Co.) Crimson Rambler × Victor Hugo. 16, 19. Probably the same as Philadelphia, Mult. Syn., Philadelphia Crimson Rambler. 15*oo*.

PIERCE, JOSHUA, Washington, D.C.
See Eva Corinne, Set.†; Jane, Set.†; Mrs. Pierce, Set.†; Pride of Washington, Set.†; Triumphant, Set.

PIERSON, INC., A. N., Cromwell, Conn.
See Bloomfield Abundance, H.T.; Crusader, H.T.; Dark Pink Killarney, H.T.†; Dr. Huey, H.W.; Elizabeth Zeigler, H.W.; Evelyn, H.T.; Hadley, H.T.; Killarney Queen, H.T.; Lady Cromwell, H.T.†; Little Sunshine, Poly.†; Mrs Belmont Tiffany, H.T.; Mrs. Charles Bell, H.T.; Mrs. John Cook, H.T.; Mrs. Wm. R. Hearst, H.T.; Pilgrim, H.T.; Red Killarney, H.T.†; Red Radiance, H.T.

PIERSON, F. R., Tarrytown, N. Y.
See Double Pink Killarney, H.T.; Pink Key, H.T.; Rosalind, H.T.; Sylvia, H.T.

PILGRIM, H.T. (Montgomery Co. Inc., reg. A. R. S., 1919; intro. by A. N. Pierson, Inc., 1920.) Seedling.
PILLAR OF GOLD, Cl.T.† (Conard & Jones Co., 1909.) 19.
PINK BEAUTY, H.T. (J. Cook, reg. A. R. S., 1919.) Ophelia × My Maryland.
PINK BEDDER, H.T.† (Meehan.) 45.
PINK CECILE BRUNNER, Poly. (Western Rose Co., 1918.) Sport. 15*ff*.
PINK CHEROKEE, Læv. (California, 1887.) *R. lævigata* × *R. indica*. 15.
PINK FRAU KARL DRUSCHKI, H.P. (California Rose Co., 1910.) Sport. 15.
PINK KEY, H.T. (F. R. Pierson, 1920.) Sport of Francis Scott Key. 15*r*.
PINK OPHELIA, H.T. (Howard & Smith, 1916.) Sport. 15*bb*.
PINK PEARL, H.W. (Manda, 1901.) *R. Wichuraiana* × Meteor.
PINK PERLE DES JARDINS, T.† (Nanz & Neuner, 1891.) Sport. 1, 45.
PINK ROAMER, H.W. (Manda, 1898; reg. S. A. F., 1897.) 1, 42. Syn., Pink Rover. 15*oo*.
PINK SOUPERT, D.Poly. (Dingee & Conard, 1896.) 1. Sport from Clotilde Soupert.
POM POM, H.W. (U. S. Dept. of Agric., 1910.) 25. Crimson Rambler × *R. Wichuraiana*. 15.
PREMIER, H.T. (E. G. Hill Co., 1918.) Ophelia seedling × Mrs. Charles E. Russell. 15*o*. Syn., Rose Premier, reg. A. R. S., 1917.
PRESIDENT ROOSEVELT, H.T. (Dingee & Conard, 1907.) 42.
PRESIDENT TAFT, H.T. (McCullough, 1908.) Syns., President W. H. Taft; Taft Rose; Wm. H. Taft. 15*oo*.

Pretty American, † (*R. Lawrenciana.*) (Boll, 183– or 185–.) 10.
Pride of the South, Set. (America.) 15*gg*.
Pride of Washington, Set.† (Pierce, about 185–.) 7, 10, 19.
Primrose, T.† (Dingee & Conard, 1908.) 19.
Princess, Mult. (Walsh, reg. 1902.) 42.
Princess Bonnie, T. (Dingee & Conard, 1897.) 1. Bon Silene × Wm. F. Bennett. 19.
Princess Ena, Poly. (H. B. May, 1907.) Sport of Baby Crimson Rambler. 26.
Prince Theodore Bonney, H.T.† (Dingee & Conard, 1898.) Bon Silene × Wm. F. Bennett. 42.
Princeton, H.T.† (Stockton & Howe, 1912.) 41.
Priscilla, H.T. (P. Henderson & Co., 1910.) Kaiserin Auguste Victoria × Frau Karl Druschki. 5, 25. *See also* Montgomery's Priscilla.
Prof. C. S. Sargent, H.W. (Hoopes, Bro. & Thomas Co., 1903.) *R. Wichuraiana* × Souv. d'Auguste Metral. (Not the same as Sargent.) 19.

PURDOM, ——. Arnold Arboretum, Jamaica Plain, Mass.
See Rosa bella, Species; *Rosa bella pallens*, Species.

Purity, H.W. (Hoopes, Bro. & Thomas Co., 1917.) Unnamed seedling × Mme. Caroline Testout. Silver Medal, A. R. S., 1915.
Queen Beatrice, H.T. (Kramer, 1907.) 15*k*. Mme. Abel Chatenay × Liberty. 25.
Queen Madge, H.T.† (Fitzsimmons, reg. 1902.) 42.
Queen of Edgely, H.P. (Floral Exchange, 1901.) 19, 42. Sport from American Beauty. Syn. Pink American Beauty. 15.
Queens Scarlet, Ben. (Hallock & Thorpe, 1880.) 17. Syn., Red Hermosa. 15*oo*.
Radiance, H.T. (J. Cook; intro. by P. Henderson & Co., 1908.) Enchanter × Cardinal. Silver Medal, A. R. S., 1914. 19.
Rainbow, T. (Sievers, 1891; intro. by Dingee & Conard.) Sport from Papa Gontier. 2, 3, 19.

RAMBRIDGE & HARRISON, Baltimore, Md. *See* Viridiflora, Ben.

Ramona, Læv. (Dietrich & Turner, 1913.) Sport from Pink Cherokee. Syn., Red Cherokee. 15.

RAND, EDWARD. *See Rosa Watsoniana*, Species.

RANDALL & CO., A. L., Chicago, Ill. *See* Mrs. Sarah Yeats, H.T.
Red Columbia, H.T. (Jos. H. Hill Co., reg. A. R. S., 1920.) Sport.
Red Conrad F. Meyer, H.Rug. (Ellwanger & Barry, 1907.) 15*aa*, 38.
Red Killarney, H.T.† (A. N. Pierson, Inc., 1910 or 1911.) Sport. 40, 42. Cert. of Merit, A. R. S., 1911.
Red Pet, Ben.† (Parker, 1888.) 45.
Red Radiance, H.T. (A. N. Pierson, Inc., 1916.) Sport. 15*n*.
Red Radiance, H.T. (Gude Bros., 1916.) Sport. Darker than Pierson's. 15*hh*.
Regina, H.W. (Walsh, 1916.) 15*b*.

REHDER, ALFRED, Arnold Arboretum, Jamaica Plain, Mass.
See Rosa Jackii, Species.

REHDER & WILSON, Arnold Arboretum, Jamaica Plain, Mass.
See Rosa chinensis spontanea, Species; *Rosa Davidii elongata*, Species; *Rosa filipes*, Species; *Rosa Giraldii glabriuscula*, Species; *Rosa Giraldii venulosa*, Species; *Rosa glomerata*, Species; *Rosa graciliflora*, Species; *Rosa Helenæ*, Species; *Rosa Moyesii rosea*, Species; *Rosa multiflora cathayensis*, Species; *Rosa Murielæ*, Species; *Rosa odorata Embescens*, Species.

REINBERG, PETER, Chicago, Ill.
See Climbing Killarney, H.T.; Mrs. Marshall Field, H.T.†

RELIANCE, H.T.† (E. G. Hill Co., 1910.) 4, 19. Etoile de France × Chateau de Clos Vougeot.

RENA ROBBINS, H.T. (E. G. Hill Co., 1911.) Paul Neyron × Mme. Jenny Gillemot.

REUTER & SONS, S. J., Westerly, R. I.
See Double Improved White Killarney, H.T.†; Lady Ann Borodell, H.T.

RHEA REID, H.T. (E. G. Hill Co., 1908.) American Beauty × red seedling. 12, 19.

RICHMOND, H.T. (E. G. Hill Co., 1905.) Lady Battersea × Liberty. 19. Syn., Everblooming Jack Rose. 15*oo*.

ROBERT CRAIG, H.W. (Hoopes, Bro. & Thomas Co., 1903.) *R. Wichuraiana* × Beaute Inconstante. 19.

ROBERT HELLER, H.T. (E. G. Hill Co., 1911.)

ROBERT SCOTT, H.T. (Robert Scott & Son, 1901.) 15. Merveille de Lyon × Mrs. W. J. Grant (Belle Siebrecht). 19.

ROBIN HOOD, H.T. (E. G. Hill Co., 1912.)

ROEHRS & CO., JULIUS, Rutherford, N. J.
See Newport Fairy, H.Mult.; White Tausendschön, H.Cl.

ROMMEL, ——. *See* Adam Rackles, H.T.†

ROSALIE, T.† (Ellwanger & Barry, 1884.) Seedling from Marie Van Houtte. 17. Syn., Fairy Queen. 1.

ROSALIND, H.T. (F. R. Pierson Co., reg. A. R. S., 1918.) Sport of Ophelia.

ROSALIND ORR ENGLISH, H.T. (E. G. Hill Co., 1905.) 3, 15. Mme. Abel Chatenay × Papa Gontier. 19.

ROSA BELLA, Species. (Raised from seed collected by Purdom and classified by Rehder & Wilson, from northwestern China, 1910.) 34, 35.

ROSA BELLA PALLENS, Species. (Raised from seed collected by Purdom and classified by Rehder & Wilson, from northwestern China, 1910.) 34, 35.

ROSA BRACTEATA, Species. (From China and Formosa, naturalized in America.) 34.

ROSA CHINENSIS SPONTANEA, Species. (Rehder & Wilson, from central China, between 1907 and 1910.) 34.

ROSA DAVIDII ELONGATA, Species. (Rehder & Wilson, from southern China, 1908.) 34, 35.

ROSA FILIPES, Species. (Rehder & Wilson, from southern China, 1910.) 34, 35.

ROSA GIRALDII GLABRIUSCULA, Species. (Rehder & Wilson, from China, 1910.) 35.

ROSA GIRALDII VENULOSA, Species. (Rehder & Wilson, from central China, 1910.) 34, 35.

ROSA GLOMERATA, Species. (Rehder & Wilson, from western China, 1910.) 34, 35.

ROSA GRACILIFLORA, Species. (Rehder & Wilson, from China, 1908.) 35.

ROSA HELENÆ, Species. (Rehder & Wilson, from central China, 1907.) 29, 36.

ROSA HUMILIS HYBRIDA, Hybrid. (America, before 1893.) *R. humilis* × *R. rugosa*. 35.

ROSA HYBRIDA, MAX GRAF, Hybrid. *See* Max Graf.

ROSA JACKII, Species. (Rehder, from China, 1905.) 29. Syn., *R. Kelleri*. 34.

ROSA JACKSONII, Hybrid (Dawson, 1897.) 35. *R. rugosa* × *R. Wichuraiana*. 29.

ROSA LÆVIGATA, Species. (Brought to America from China and Formosa early in the 17th century.) Syns., *R. sinica, R. cherokensis, R. ternata, R. nivea*, Camellia, Cherokee Rose. 34, 36.

ROSA MOYESII ROSEA, Species. (Rehder & Wilson, from China, 1910.) 35.

ROSA MULTIFLORA CATHAYENSIS, Species. (Rehder & Wilson, from China, 1907.) 34, 36.

ROSA MURIELÆ, Species. (Rehder & Wilson, from China, 1910.) 34, 35.

ROSA ODORATA, Double White, Species. (Identified by Rehder & Wilson.; intro. in America from Pautung Fu, Chihli Provence, China, by Frank N. Meyer, U. S. Dept. of Agric.) 15*x*

ROSA ODORATA EMBESCENS. Species. (Rehder & Wilson, from western China.) 34.

ROSA RUGOSA MAGNIFICA, H.Rug. (Van Fleet, 1905; intro. by Conard & Jones Co.) *R. rugosa* × Ards Rover.

ROSA SMITHII, T.† (Smith, 1834.) Syn., Smith's Yellow. 1.

ROSA SPINOSISSIMA HYBRIDA, Hyb. (Elliott Nursery.) 15*ee*.

ROSA WATSONIANA, Species. (Edward Rand sent it to Arnold Arboretum in 1878, originally found by him in a garden at Albany, N. Y.) 35. Supposed to have been intro. from Japan but not known in wild state. 34.

ROSA WICHURAIANA RUBRIFOLIA, H.W. (Conard & Jones Co., 1901.) 45.

ROSA WICHURAIANA VARIEGATA, W. (Conard & Jones Co.) 15*d*.

ROSA XANTHINA, Species. (Lindley.) (Intro. in America in 1905 from near Peking, China, by Frank N. Meyer, U. S. Dept. of Agric.) 15*x*.

ROSA XANTHINA FORMA NORMALIS, Species. (Named by Rehder & Wilson; intro. into America in 1907 from Shushan, Shantung, China, by Frank N. Meyer, U. S. Dept. of Agric.) 15*x*.

ROSE MARIE, H.T. (F. Dorner & Sons, 1918.) Hoosier Beauty × Sunburst.

ROSEMARY, H.T. (E. G. Hill Co., 1907.) 19.

ROSENBLUTH, EDWIN M., Wallingford, Pa. *See* Greatheart, H.T.

ROSE-PINK OPHELIA, H.T. (P. Breitmeyer's Sons, 1917.) Sport.

ROSE QUEEN, H.T. (E. G. Hill Co., 1911.)

ROSERIE, Mult. (Witterstaetter, 1917.) Sport from Tausendschön. 15*ii*. Syn., Rosary. 15*oo*.

ROTARIAN, H.T. (F. H. Lemon & Co., reg. A. R. S., 1921.) Ophelia × unknown pollen parent.

ROYAL CLUSTER, Mult.† (Conard & Jones Co., 1899.) Armosa (Hermosa) × Dawson. 19, 25.

RUBY GOLD, T.† (O'Connor, 1891.) Sport from a graft of Catherine Mermet on Marechal Niel. 1.

RUBY QUEEN, H.W. (Van Fleet, 1899; intro. by Conard & Jones Co.) *R. Wichuraiana* × Queens Scarlet. 16.

RUSSEL, ——. *See* Russeliana, Set.

RUSSELIANA, Set. (Russel, 1900.) 25. Syns., Russell's Cottage; Russel's Cottage. 15*oo*. Syns., Scarlet Grevillea; Cottage Rose. 21.

RUTH VESTAL, Cl.T. (Vestal & Sons, 1908.) Sport from Bride. 30. Syn., Climbing Bride. 15.

SANTA ROSA, H.Ben.-T. (Burbank, 1900.) 13, 19. Second generation Hermosa seedling × seedling of Bon Silene. 42.

SARAH ISABELLE GILL, T.† (Gill, 1897.) 19.

SARGENT, H.W. (Dawson, 1912.) *R. Wichuraiana* × Crimson Rambler × Baroness Adolphe de Rothschild. 31.

SATISFACTION, N. (California Rose Co., 1915.) 15. Sport from Reve d'Or. 30.

SCHOENER, REV. GEORGE, M.A., Santa Barbara, Calif.
See Molloty, H.T.; My Queen, H.T.; Pearl of the Pacific, H.T.; Trophine, H.T.

SCHULTHEIS, ANTON, College Point, Long Island, N. Y.
See Apple Blossom, Poly.; Edward VII, Poly.; Flower of Fairfield, Mult.

SCOTT & SON, ROBERT, Sharon Hill, Pa.
See Cornelia, H.T.; Double Pink Killarney, H.T.; Mrs. Prentiss Nichols, H.T.; Robert Scott, H.T.

SEASHELL, H.W. (Dawson, 1916; intro. by Eastern Nurseries.) 31.
SEPTEMBER MORN, H.T. (Dietrich & Turner, 1915.) Sport from Mme. Paul Euler. 15.
SETIGERA HYBRID, Hyb.† (Dawson.) *R. setigera* × *R. Wichuraiana*. 31.
SETINA, Cl.B. (P. Henderson & Co., 1879.) Sport from Hermosa. Syns., Climbing Hermosa; Cetina. 9, 17, 19.
SHATEMUC, Poly. (Shatemuc Nurseries, 1911.) 42.
SHATEMUC NURSERIES, Barrytown, N. Y. *See* Shatemuc, Poly.
SHEPHERD CO., T. B. *See* Shepherd's Oriole, N.
SHEPHERD'S ORIOLE, N. (Shepherd, 1905.) 15.
SIEVERS, ——. *See* Rainbow, T.
SILVER MOON, H.W. (Van Fleet; intro. by P. Henderson & Co., 1910.) *R. Wichuraiana* × *R. lævigata* (Cherokee Rose.) 15*s*, 32.
SILVER STAR, H.W. (F. R. M. Undritz, reg. A. R. S., 1920; intro. by Reinhold Undritz.) Silver Moon × Marie van Houtte.
SILVER WEDDING, H.T. (Albert F. Ambling Co., reg. A. R. S., 1921.) Sport of Ophelia.
SIR THOMAS LIPTON, H.Rug. (Van Fleet, 1900; intro. by Conard & Jones Co.) *R. rugosa* × Clotilde Soupert. 19.
SMILEY, ——. *See* Onondaga Seedling, H.P.†
SMITH, ——, Philadelphia, Pa. *See* Mrs. Smith, H.P.†; Rosa Smithii, T.†
SMITH, ——. *See* Climbing Countess of Oxford, H.P.
SMITH, WM. R., Washington, D.C.
See Fair Helen, H.P.†; Snowdrift, H. W.; Wm. R. Smith, H.T.
SNOWBALL, Poly.† (P. Henderson & Co., 1899.) 42.
SNOWBALL, Mult.† (Walsh, 1901.) 45.
SNOWDRIFT, H.W.† (Walsh.)
SNOWDRIFT, H.W. (Smith, 1914.) 15*oo*.
SNOWFLAKE, T.† (Strauss & Co., 1890.) 17.
SOUTHERN BEAUTY, H.P.† (Nanz & Neuner, 1888.) 1, 45.
SOUTHERN BEAUTY, H.T.† (Dingee & Conard, reg. S. A. F., 1897.) 42.
SOUTH ORANGE BEAUTY, H.W.† (Manda, 1909.) 37.
SOUTH ORANGE PERFECTION, H.W. (Manda, 1899.) 3. *R. Wichuraiana* × Mme. Hoste. 19. (1897.) 45. (Reg. S. A. F., 1897.) 42.
SOUV. DE HENRY CLAY, Scotch Hyb.† (Boll, 1854.) 17.
SOUV. OF HENRY CLAY, Centifolia-pompon.† (America.) 45.
SOUV. OF WOOTTON, H.T. (J. Cook, 1888.) Bon Silene × Louis van Houtte. Said to be the first Hybrid Tea rose raised in the United States. 19. Syns., Souv. de la Wootton; Souv. de Wootton. 15*oo*.
SPECTACULAR, H.T.† (Elliott, 1912.) Sport of Killarney. Syn., Striped Killarney. 15*f*, 15*oo*.
SPRUNT, REV. JAMES M., Kenansville, N. C.
See Isabella Sprunt, T.; James Sprunt, Cl.Ben.; Le Vesuve, Ben.-C.†
STAR OF THE WEST, B.† (Page, 1859.) 45.
STEWART, ——, Philadelphia, Pa. *See* Washington, N.†
STOCKTON & HOWE, Princeton, N. J. *See* Princeton, H.T.†
STORRS & HARRISON CO., Painesville, Ohio.
See Climbing Gruss an Teplitz, H.T.; Mrs. C. W. Thompson, Mult.
STRAUSS & CO., Washington, D. C. *See* Snowflake, T.†
STRONG, WM. C. *See* Dawson, Mult.
STRIPED RADIANCE, H.T. (Joseph Vestal & Son, 1919.) Sport of Radiance. 15*qq*.

Summer Joy, H.W. (Walsh, 1911.) 15*b*.
Sunbeam, T. (California Rose Co., 1908.) 15. Sport from Golden Gate. 30.
Sunset, T. (P. Henderson & Co., 1883.) 1, 16, 19. Sport from Perle des Jardins.
Sunshine, Mult.† (Jackson & Perkins, 1911.) 42.
Superba, Set. (Feast, 1843.) 10, 16, 17, 20.
Sweetheart, H.W. (Walsh, 1899.) *R. Wichuraiana* × Bridesmaid. 15*b*, 16, 19.
Sweet Marie, H.T. (California Rose Co., 1915.) Sport from Mrs. G. W. Kershaw. 15.
Sylvia, H.T. (F. R. Pierson Co., reg. A. R. S., 1918.) Sport of Ophelia.

TAYLOR, J. H., Bayside, N. Y. (?). *See* Admiral Dewey, H.T.
Tennessee Belle, Mult. (America.) 15*gg*.
The Gem, T.† (Conard & Jones Co., 1903.) 45.
The Oregon, H.T.† (E. G. Hill Co., never formally intro.) Liberty × unnamed seedling. 12.
The Queen, T. (Dingee & Conard, 1896.) 1.

THOMAS, Jr., CAPT. GEORGE C., Beverly Hills, Calif.
See Bloomfield Abundance, H.T.; Bloomfield Perpetual, H.P.; Bloomfield Progress, H.T.; Dr. Huey, H.W.; Mrs. George C. Thomas, Cl. H.T.

Thora, H.T. (Burton, 1914.)

THORPE, JOHN, Chicago, Ills. *See* Uncle John, T.
Tom Field, H.T. (Field Bros., 1906. 42.

TOTTY CO., CHARLES H., Madison, N. J.
See Blush Maryland, H.T.†; Double White Killarney, H.T.; Mrs. F. F. Thompson, H.T.; White Shawyer, H.T.; Frank W. Dunlop, H.T.

TOWILL, EDWARD, Roslyn, Pa.
See Golden Gem, H.T.; Legion, H.T.; Milady, H.T.; Mrs. E. T. Stotesbury, H.T.

Triumph, H.T.† (E. G. Hill Co., 1906 or 1907.) 3, 13, Gruss an Teplitz × General MacArthur. 25.
Triumphant, Set. (Pierce, 1850.) 1, 10, 16.
Trophine, H.T. (Schoener, 1919 (?).) White Killarney × Kaiserin Auguste Victoria. 15*dd*.
Troubadour, H.W. (Walsh, 1910.) 25.
Uncle John, T. (Thorpe, 1904.) 19. Sport of Golden Gate. 30.
UNDRITZ, F. R. M., West New Brighton, N. Y.
See Freedom, H.W.; Gen. John Pershing, H.W.; Silver Star, H.W.; Victory, H.W

UNDRITZ, REINHOLD, West New Brighton, N. Y.
See Freedom, H.W.; Gen. John Pershing, H.W.; Silver Star, H.W.; Victory, H.W.
Universal Favorite, H.W. (Manda, 1899.) 3. *R. Wichuraiana* × American Beauty. 19. (Reg. S. A. F. 1897.) 42.
Urania, H.Cl. (Walsh, 1902.) A. R. S. Special Newbold Fund Prize.
Urania, H.P. (Walsh, 1906.) 3. (1905.) Seedling from American Beauty, 16. American Beauty (Mme. Ferd. Jamain) × Susanne Marie Rodocanachi (Mme. Rodocanachi). 19.

U. S. DEPARTMENT OF AGRICULTURE, Washington, D. C.
See Climbing Oriental, C.; Pom Pom, H.W.

U. S. NURSERIES, Roseacres, Miss. *See* Climbing Pink American Beauty, H.T.

VAN FLEET, DR. W., Little Silver, N. J., and Bell, Md.
See Alba rubrifolia, H.W.; Alida Lovett, H.W.; American Pillar, H.W.; Aunt Harriet, H.W.; Bess Lovett, H.W.; Birdie Blye, Mult.; Charles Wagner, H.P.; Clara Barton, H.T.-Poly.; Dr. W. Van Fleet, H.W.; Garnet Climber, H.W.; Magnafrano, H.T.; Mary Lovett, H.W.; Mary Wallace, H.W.; May Queen, H.W.; Mrs. Lovett, H.W.; New Century, H.Rug.; Northern Light, H.W.; Pearl Queen, H.W.; Philadelphia, Mult.; Ruby Queen, H.W.; Rugosa magnifica, H.Rug.; Silver Moon, H.W.; Sir Thomas Lipton, H.Rug.

VAUGHAN'S SEED STORE, Chicago, Ills., and New York, N. Y.
See Vaughan's White Baby Rambler, Poly.

VAUGHAN'S WHITE BABY RAMBLER, Poly. (Vaughan, 1908.) 15*jj*, 39.

VESTAL & SON, JOSEPH W., Little Rock, Ark.
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VICK'S CAPRICE, H.P. (Vick, 1893.) 1. (1889.) Sport from Archduchesse Elizabeth d'Austriche. 16, 19.

VICK & SON, JAMES, Rochester, N. Y. *See* Vick's Caprice, H.P.

VICTOR, H.T. (E. G. Hill Co., 1918.) Ophelia seedling × Killarney Brilliant.

VICTORY, H.W. (F. R. M. Undritz, reg. A. R. S., 1918; intro. by Reinhold Undritz, 1918.) Dr. W. Van Fleet × Mme. Jules Grolez.

VICTORY ROSE, H.P.† (Dingee & Conard, 1901.) 45.

VIRGINIA, T. (Dingee & Conard, 1894.) 1.

VIRGINIA, T. (Nanz & Neuner, 1896.) 45.

VIRGINIAN LASS, H.Set.† (America.) 45.

VIRGINIAN RAMBLER, Mult † (America.) 45.

VIRIDIFLORA, Ben. (Rambridge & Harrison, 1856.) 1, 15*oo*. Syn., Green Rose. 15*oo*.

WABAN, T. (E. M. Wood & Co., 1891.) Sport of Catherine Mermet. 16, 19.

WABAN ROSE CONSERVATORIES, Natick, Mass.
See Mrs. Bayard Thayer, H.T.; Mrs. Moorfield Storey, H.T.; White Killarney, H.T.

WALSH, M. H., Woods Hole, Mass.
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WEDDING BELLS, H.W. (Walsh, 1907.) 19. Seedling from Crimson Rambler. 16, 38. (1906). 25.

WEILAND & RISCH CO., Chicago, Ills. *See* Champ Weiland, H.T.

WELLESLEY, H.T. (Alex. Montgomery, Jr., 1904.) Liberty × Bridesmaid. 16.

WESTERN ROSE CO., Pasadena, Calif. *See* Pink Cecile Brunner, Poly.

WEST GROVE, H.T. (Dingee & Conard, reg. 1914.) Liberty × Kaiserin Auguste Victoria.

WHITE BOUGERE, T. (Dunlop, 1898.) Sport. 42.

WHITE DAWSON, Mult.† (Ellwanger & Barry, 1901.) 19.

WHITE KILLARNEY, H.T. (Waban Rose Conservatories, 1909.) Sport. 19.

WHITE MAMAN COCHET, T. (J. Cook, 1896.) Sport, 16, 19.

WHITE OPHELIA, H.T. (Cleveland Cut-Flower Co., 1920.) Sport.

WHITE PEARL, T.† (Nanz & Neuner, 1890.) 1, 45.

WHITE PET, D.Poly.† (Dingee & Conard, reg. S. A. F., 1897.) 42.

WHITE SHAWYER, H.T. (Totty, 1915.) Sport. 15*e*.

WHITE STAR, H.W. (Manda, 1901.) Jersey Beauty × Manda's Triumph.

WHITE TAUSENDSCHÖN, Mult. (Roehrs, 1918.) Sport. 15*kk*.

WILHELMINA, H.T.† (Hoerber Bros., 1911.) 42.
WILLIAM HERBERT, H.P.† (America.)
WILLIAM SAUNDERS, H.T. (Byrnes, U. S. Dept. of Agric., 1918.) 46.
WILLIAM WARDER, H.P. (Mitchell, 1880.) 45.
WILLIAM WRIGHT WALCOTT, H.T. (McGorum, reg. A. R. S., 1921.) Seedling of unnamed sport of Richmond × Ophelia.
WINNIE DAVIS, H.T. (Nanz & Neuner, 1900.) Kaiserin Auguste Victoria × Mrs. W. J. Grant (Belle Siebrecht.) 42.
WINONA, H.Ramb. (Walsh, 1911.) 40.
WINTER GEM, T. (Childs, 1898.) 15*f*.
WITTERSTAETTER, RICHARD, Cincinnati, Ohio. *See* Roserie, Mult.
WM. C. EGAN, H.W. (Dawson, 1900; intro. by Hoopes, Bro. & Thomas Co.) *R. Wichuraiana* × General Jacqueminot. 15*ll*.
WM. F. DREER, Per. (Howard & Smith, 1920.) Result of a cross between two unnamed seedlings. 15*cc*.
WM. R. SMITH, T. (Smith, 1908; intro. by P. Henderson & Co., 1908.) Maman Cochet × Kaiserin Auguste Victoria. Syns., Jeannette Heller; Charles Dingee; Maiden's Blush; President Wm. R. Smith. 4, 15*oo*, 19.
WM. S. CLARK, H.T. (Clark, 1907.) Liberty × Mme. Abel Chatenay. 38.
WM. K. HARRIS, W. (Hoopes, Bro. & Thomas Co., 1903.) 19.
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WOODHOUSE, ——. *See* Champion of the World, Ben.
WOODLAND MARGUERITE, N.† (Pentland, 1859.) 17.
W. T. DREER, W. (Hoopes, Bro. & Thomas Co., 1903.) 4, 19.
WYNDMOOR, H.T. (Myers & Samtman, 1907.) American Beauty × Safrano. 39.
YEATS, ——. *See* Mrs. Sarah Yeats, H.T.
YELLOW PRESIDENT CARNOT, H.T. (California Rose Co., 1910.) 15.
YOUNG AMERICA, H.T.† (E. G. Hill Co., 1902.) 45.

New Roses Registered in 1921-22

From E. M. Rosenbluth, Wallingford, Pa., January, 1921:

Greatheart, H.T. Sport of Mrs. Walter Easlea. Bud medium size, long-pointed to ovoid; flower large, double, cupped, very lasting; pale flesh, shaded salmon, deeper at center, silvery reflexes; borne singly on long, strong stem; fragrant. Foliage sufficient, medium size, soft, rich green, disease-resistant. Vigorous, upright; blooms freely at intervals all summer. Freezes 6 to 7 inches.

From Howard & Smith, Los Angeles, Calif., January, 1922:

Mrs. William C. Egan, Per.-H.T. Cross of unnamed varieties. Type, Mme. Segond Weber. Bud long-pointed; flower full, lasting, delicate pink; fragrant. Foliage leathery. Vigorous, upright; free bloomer.

Fragrant Bouquet, Per.-H.T. Cross of unnamed varieties. Bud long-pointed; flower full, double, cupped, very lasting; shell-pink, base of petals yellow; strong fragrance. Foliage leathery. Medium height, bushy habit; very free blooming.

From Robert T. McGorum, Natick, Mass., September, 1921:

William Wright Walcott, H.T. Seedling of unnamed sport of Richmond × Ophelia. Good bud; flower full, lasting; outer petals deep pink, inner ones light pink—never fades. Foliage dark green. Vigorous, upright; very free bloomer.

From Albert F. Amling Co., Maywood, Ills., May, 1921:

Silver Wedding, H.T. Sport of Ophelia. Exactly like Ophelia, except that foliage is cream-colored, with red tinge on young growth.

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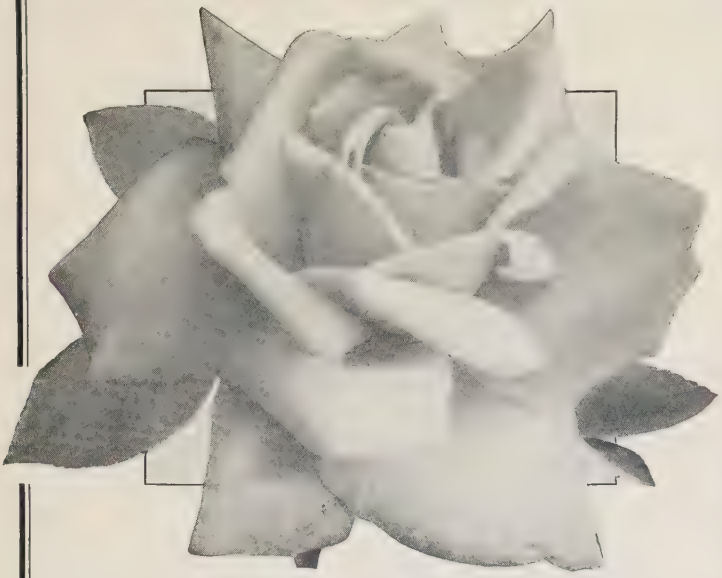

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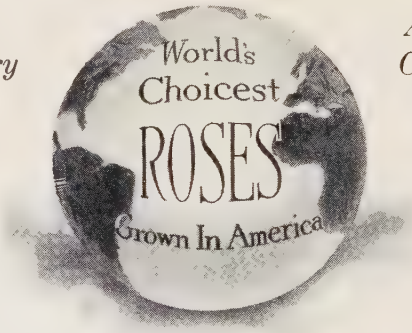

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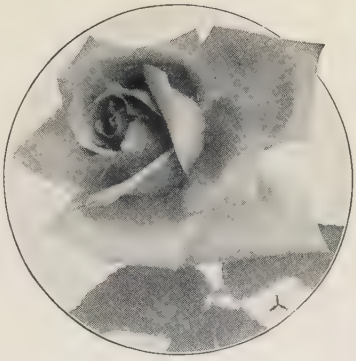

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The original plants of both these roses were sent to us at West Grove and we had them blooming here for several years before they were introduced. Peter Henderson & Company put out the Dr. Van Fleet Rose, having bought the right to do so from Dr. Van Fleet himself, but fortunately for them the Doctor had entrusted us with some of the stock. Henderson's propagations were quite insufficient to supply the demand and we were able to supplement and supply them from the very first year it was offered.

Mrs. Elinore E. Harde in "Our Garden Journal" says: "But the most perfect hedge I ever have seen was made with climbing Dr. Van Fleet rose vines. Its ideal foliage is immune from every known rose enemy or blight, and its glistening leaves and long, flexible, coral thorned canes may be trained with but little trouble. A photograph I was shown of this Van Fleet hedge in bloom showed thousands of the flesh-pink hybrid-tea form roses in bloom."

American Pillar, which we introduced in 1906, had a different story. It was raised in 1898 from seed of Wichuraiana Setigera, cross-pollinated with a bright red Remontant Rose seedling that had a touch of Polyantha, or rather *Rosa multiflora* in its make-up. The American Pillar, therefore, contains the blood of four Rose species; but Dr. Van Fleet said, "I always regard it as an essentially Wichuraiana Setigera Hybrid." We had American Pillar on trial for some time, but it was ten years before the American public fully appreciated it. Now we are happy to say it has won its way beyond question.

We have a magnificent stock of both these roses, strong field-grown plants in ample quantity.

For planting on a trellis, arbor, on fences or for making hedges, there are no two roses we know that we think lend themselves better than these excellent hardy, rugged, high-grade American Roses.

These and other roses are fully described and shown in natural colors in our 1922 Catalogue. Send for it today.

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